

MAINVIEW[®] AutoOPERATOR

Basic Automation Guide

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 - system hardware configuration
 - serial numbers
 - related software (database, application, and communication) including type, version, and service pack or maintenance level
- sequence of events leading to the problem
- commands and options that you used
- messages received (and the time and date that you received them)
 - product error messages
 - messages from the operating system, such as `file system full`
 - messages from related software

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About This Book

The *MAINVIEW AutoOPERATOR Basic Automation Guide* is for operators and system programmers who need to perform basic automation tasks in the data center.

Use this book with the MAINVIEW AutoOPERATOR product to learn about the basic automation tasks that you can accomplish with the base component of the MAINVIEW AutoOPERATOR product.

Throughout this book, references to OS/390 support also include support for MVS and z/OS.

How This Book Is Organized

This book is organized as follows. In addition, this book contains an index.

Chapter/Appendix	Description
Chapter 1, "Introduction to MAINVIEW AutoOPERATOR"	describes how to access MAINVIEW AutoOPERATOR and products
Chapter 2, "Describing Common Application Functions and Display Fields"	describes how to use facilities and techniques common to all BBI-2
Chapter 3, "Automation with Rules: The Rule Processor Application"	describes MAINVIEW AutoOPERATOR Rules and the MAINVIEW AutoOPERATOR Rules applications
Chapter 4, "Describing Events"	describes MAINVIEW AutoOPERATOR events
Chapter 5, "Creating Rules for Events: Using the Rule Processor Detail Control Panel"	describes how to create Rules for events by using the Rule Processor panels

Chapter/Appendix	Description
Chapter 6, "Creating Rules for Events: Using the Rule Creation Panels"	describes how to create Rules for events by using the Rule Creation panels
Chapter 7, "Creating Rules: Examples"	provides examples of how to create Rules
Chapter 8, "Creating More Powerful Rules"	describes how to use pattern matching and variables to create more powerful Rules
Chapter 9, "Managing Rules and Automation Using the Automation Control Panel"	describes how to use the Automation Control Panel to manage Rules and automation
Chapter 10, "Using the Rule Set Overview Panel to Manage Rules in Rule Sets"	describes how to use the Rule Set Overview panel to manage Rules and filter Rule Sets
Chapter 11, "Managing by Exception: Using MAINVIEW AutoOPERATOR ALERTs"	provides an introduction to ALERTs and an overview of the ALERT Management Facility
Chapter 12, "Monitoring Automation with the Automation Reporter"	describes how to use the Automation Reporter application
Chapter 13, "Managing EXECs Using the EXEC Management Application"	describes the functions of the EXEC Management application
Chapter 14, "General Services"	describes the BBI general services that are common to all BMC Software products that use BBI-2
Appendix A, "DBCTL Commands"	provides information about the DBCTL commands

MAINVIEW AutoOPERATOR Product Library

MAINVIEW AutoOPERATOR is available with these options:

- MAINVIEW AutoOPERATOR for OS/390
- MAINVIEW AutoOPERATOR for IMS
- MAINVIEW AutoOPERATOR for CICS
- MAINVIEW AutoOPERATOR Access NV
- MAINVIEW AutoOPERATOR TapeSHARE
- MAINVIEW AutoOPERATOR for MQSeries
- MAINVIEW AutoOPERATOR Elan Workstation
- MAINVIEW AutoOPERATOR for SAP High Availability

The base product and these options are documented in the following MAINVIEW AutoOPERATOR books:

- *MAINVIEW AutoOPERATOR Customization Guide*
- *MAINVIEW AutoOPERATOR Basic Automation Guide*
- *MAINVIEW AutoOPERATOR Advanced Automation Guide*
- *MAINVIEW AutoOPERATOR Options User Guide*
- *MAINVIEW AutoOPERATOR for MQSeries Installation and User Guide*
- *MAINVIEW AutoOPERATOR Reference Summary*
- *MAINVIEW AutoOPERATOR Solutions Guide*

Related Reading

The following IBM[®] documents are referenced in this guide:

- *CICS Supplied Transactions*, SC33-1686-2
- *CICS Operations and Utilities Guide*, SC33-1685
- *Supervisor Services and Macro Instructions*, GC28-1154
- *TSO Extensions Version 2 REXX Reference*, SC28-1883

and the following BMC Software documents:

- *MAINVIEW Common Customization Guide*
- *MAINVIEW Administration Guide*
- *Using MAINVIEW*
- *MAINVIEW Quick Reference*
- *OS/390 and z/OS Installer Guide*
- *Implementing Security for MAINVIEW Products*
- *MAINVIEW Alternate Access Implementation and User Guide*
- *MAINVIEW Alarm Manager User Guide*
- *MAINVIEW Products General Information*

What the Conventions Are

The following syntax notation is used in this manual. Do not enter the special characters.

- Brackets, [], enclose optional parameters or keywords.
- Braces, { }, enclose a list of parameters; one must be chosen.
- A vertical line, |, separates alternative options; one can be chosen.
- An *italicized* or underlined parameter is the default.
- AN ITEM IN CAPITAL LETTERS must be entered exactly as shown.
- Items in lowercase letters are values you supply.

Related Documentation

BMC Software products are supported by several types of documentation:

- online and printed books
- release notes and other notices

Online and Printed Books

The books that accompany BMC Software products are available in online and printed formats. Online books are formatted as Portable Document Format (PDF) files. Some online books are also formatted as HTML files.

To Access Online Books

To view any online book that BMC Software offers, visit the Customer Support page of the BMC Software Web site at **<http://www.bmc.com/support.html>**. You can also access PDF books from the documentation compact disc (CD) that accompanies your product.

Use the free Acrobat Reader from Adobe Systems to view, print, or copy PDF files. In some cases, installing the Acrobat Reader and downloading the online books is an optional part of the product-installation process. For information about downloading the free reader from the Web, go to the Adobe Systems site at **<http://www.adobe.com>**.

To Request Additional Printed Books

BMC Software provides some printed books with your product order. To request additional books, go to <http://www.bmc.com/support.html>.

Release Notes and Other Notices

Printed release notes accompany each BMC Software product. Release notes provide current information such as

- updates to the installation instructions
- last-minute product information

In addition, BMC Software sometimes provides updated product information between releases (in the form of a flash or a technical bulletin, for example). The latest versions of the release notes and other notices are available on the Web at <http://www.bmc.com/support.html>.

Conventions

This section provides examples of the conventions used in this book and explains how to read ISPF panel-flow diagrams and syntax statements.

General Conventions

This book uses the following general conventions:

Item	Example
information that you are instructed to type	Type SEARCH DB in the designated field. Type search db in the designated field. (Unix)
specific (standard) keyboard key names	Press Enter .
GUI elements and menu sequences	Choose File => Open .
directories, file names, Web addresses, e-mail addresses	The BMC Software home page is at www.bmc.com .
Unix commands, command options, database names	Use the sbacktrack program to create a backup script.
code examples, syntax statements, system messages, screen text	//STEPLIB DD The table <i>tableName</i> is not available.
emphasized words, new terms	The instructions that you give to the software are called <i>commands</i> .
variables	In this message, the variable <i>fileName</i> represents the file that caused the error.

This book uses the following types of special text:

Note: Notes contain important information that you should consider.

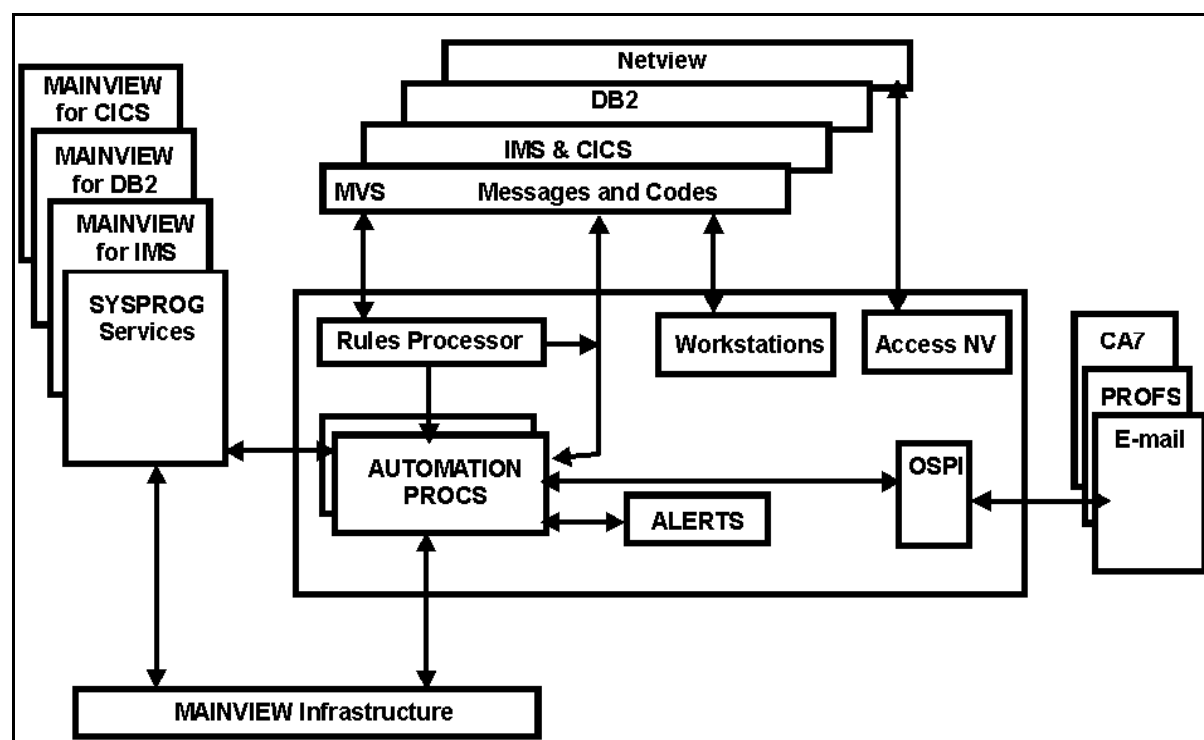
Warning! Warnings alert you to situations that could cause problems, such as loss of data, if you do not follow instructions carefully.

Chapter 1 Introduction to MAINVIEW AutoOPERATOR

MAINVIEW AutoOPERATOR is a BMC Software online product that provides the tools, techniques, and applications to improve an operator's ability to provide high system availability. MAINVIEW AutoOPERATOR helps the operator through error minimization, improved productivity, and problem determination and prevention.

Figure 1-1 on page 1-2 illustrates the overall functions and features of MAINVIEW AutoOPERATOR.

Figure 1-1 MAINVIEW AutoOPERATOR Applications Overview



How MAINVIEW AutoOPERATOR Applications Are Organized

MAINVIEW AutoOPERATOR applications use an online ISPF-like dialog interface. The applications are divided into general categories:

- operator workstation applications
- automation applications

Operator Workstation Applications

The operator workstation material consists of online menus and applications that allow you to

- manage ALERTs
- modify and display CICS, IMS, MVS, and NetView resources and activity with simple line commands

For documentation about ALERT Management, refer to Chapter 11, “Managing by Exception: Using MAINVIEW AutoOPERATOR ALERTs” and for documentation about managing CICS, IMS, MVS, and NetView resources, refer to the *MAINVIEW AutoOPERATOR Options User Guide*.

Automation Applications

The automation applications are divided into the following categories:

- Basic automation
- Advanced Automation
- Dynamic Parameter Manager

Basic Automation

The Basic Automation consists of the following types of applications:

- Rule Processor
- Automation Reporter
- object management with MAINVIEW Total Object Manager

Rule Processor

The Rule Processor applications provide a panel-driven method that you can use to create Rules that automate events on your system. Chapter 3, “Automation with Rules: The Rule Processor Application” through Chapter 10, “Using the Rule Set Overview Panel to Manage Rules in Rule Sets” explain the Rule Processor applications:

- introduction to Rules
- defining events
- identifying events for automation
- creating Rules
- managing Rules and automation
- managing Rules in Rule Sets

Automation Reporter

The Automation Reporter application enables you to gather data about specific automation activities over user-specified time intervals.

Object Management

MAINVIEW AutoOPERATOR 6.3.01 introduces the MAINVIEW Total Object Manager (TOM) product component, which provides a full-featured application that allows you to manage the status of Started Tasks (also referred to as objects), create dependencies between Started Tasks, and automate complex schedules for object availability. Refer to the *MAINVIEW Total Object Manager User Guide* for complete information about TOM.

Advanced Automation

The Advanced Automation applications include anything that involves procedural code such as the EXEC Management application, the EXEC Testing Facility, the Time-Initiated EXECs (TIMEXEC) application, and the Open System Procedural Interface (OSPI) application.

EXEC Management Application

The EXEC Management application shows you the EXECs you have written to your SYSPROC concatenation, including information about how many EXECs you have running, schedules, CPU time, and abends. Chapter 13, “Managing EXECs Using the EXEC Management Application” explains the EXEC Management application.

The EXEC Testing Facility is accessed through this application and allows you to select an EXEC to interactively debug.

TIMEXEC

The Time-Initiated EXECs application manages time-initiated EXEC requests by using the CALLX service to schedule your specified EXEC based on time. “Requesting Time-Initiated EXECs: TIMEXEC Application” on page 14-17 explains the Time-Initiated EXECs application.

The Open System Procedural Interface application is described in the *MAINVIEW AutoOPERATOR Advanced Automation Guide*. This interface allows you to capture screen images and keystrokes in an EXEC so that you can programmatically interact with any VTAM application.

Dynamic Parameter Manager

The Dynamic Parameter Manager allows you to dynamically modify the MAINVIEW AutoOPERATOR BBPARM members:

AAOALSxx	Contains MAINVIEW AutoOPERATOR ALERT parameters
AAOARPxx	Contains MAINVIEW AutoOPERATOR Automation Reporter parameters
AAOEXPxx	Contains MAINVIEW AutoOPERATOR EXEC parameters
AAOGMExx	Contains General Messages Exchange parameters
AAOTSPxx	Contains TapeSHARE parameters

This application is described in the *MAINVIEW AutoOPERATOR Customization Guide*.

How to Access MAINVIEW AutoOPERATOR

The MAINVIEW Selection Menu is displayed, as shown in Figure 1-2 on page 1-6, if you are accessing MAINVIEW from a 3270 display. (This menu is not supported in MAINVIEW Explorer PLEX mode.)

From this menu and its related set of submenus, you can access any installed MAINVIEW product. Products that work together to provide similar solutions are grouped together in submenus. You also have access to a full set of MAINVIEW functions that work with all your MAINVIEW products to help you solve your performance problems. (See *Using MAINVIEW* for a description of these functions.)

To access the MAINVIEW AutoOPERATOR submenu, shown in Figure 1-2 on page 1-6, select option A (Automated Operations) from the MAINVIEW Selection Menu.

Figure 1-2 Example of MAINVIEW Selection Menu

```

----- MAINVIEW Selection Menu -----
OPTION  ==>
                                DATE  -- 01/09/26
                                TIME   -- 10:47:08
                                USERID -- BMVDID3
                                MODE    -- ISPF 4.8

    0   Parameters and Options
    E   Alerts and Alarms
    P   PLEX Management (PLEXMGR)
    U   Utilities, Tools, and Messages

Solutions for:
    A   Automated Operations
    C   CICS
    D   DB2
    I   IMS
    L   Linux
    N   Network Management
    S   Storage Management
    T   Application Management and Performance Tuning
    W   WebSphere and MQSeries
    Z   OS/390, z/OS, and USS

Enter X to Terminate

                                Copyright BMC Software, Inc. 2002

```

Figure 1-3 shows the MAINVIEW AutoOPERATOR Primary Option Menu.

Figure 1-3 Example of MAINVIEW AutoOPERATOR Primary Option Menu

```

----- MAINVIEW AutoOPERATOR-----
OPTION  ==>
                                DATE  -- 01/10/03
                                TIME   -- 15:12:05
                                USERID -- BAONIS2
                                MODE    -- ISPF 5.0

Operator Workstations
    1 ALERTS      ALERT Management
    2 MVS         OS/390 or z/OS Resources
    3 CICS        CICS Resources
    4 IMS         IMS Resources
    5 NETVIEW     NetView Resources
    6 TAPESHARE   Tape Drive Management
    7 MQSERIES    WebSphere MQSeries

Administration
    8 AUTOMATION  Basic and Advanced Automation
    9 PARMS       Dynamic Parameter Manager

General Services
    C CYCLE       Service Refresh Cycle Setup
    L JOURNAL     Display Journal Log
    M MESSAGES    Display Messages and Codes

                                Copyright BMC Software, Inc. 2002

```

From this Primary Option Menu, you can access the operator workstations applications, the automation applications (both basic and advanced), and the Dynamic Parameter Manager application.

Figure 1-4 shows the AUTOMATION MENU (Option 8, AUTOMATION: Basic and Advanced Automation).

Figure 1-4 MAINVIEW AutoOPERATOR AUTOMATION MENU

```
BMC Software ----- AUTOMATION MENU ----- AutoOPERATOR
OPTION  ===>                                     DATE   -- 2003/10/09
                                                TIME    -- 12:24:35

Basic Automation:
  1  Event Activity Statistics
  2  Display/Modify Rules and Rule Sets
  3  Continuous State Manager - Global Overview
  4  Total Object Manager

Advanced Automation:
  6  Shared Object Facility
  7  Display/Modify EXEC Status
  8  Time-Initiated EXEC Requests
  9  Open Systems Procedural Interface (OSPI)

                                                PF1/13  HELP  PF3/15: EXIT

Copyright 2003, BMC Software, Inc. All rights reserved.
```

How the Documentation Library for MAINVIEW AutoOPERATOR Is Organized

The following table describes how the documentation library for MAINVIEW AutoOPERATOR is organized. This table is included because descriptions for the applications from the Primary Option Menu are located in different books within the MAINVIEW AutoOPERATOR product library.

For Documentation About	See
Option 1: ALERT Management	Chapter 11, "Managing by Exception: Using MAINVIEW AutoOPERATOR ALERTs" in this book
Options 2, 3, 4, and 5: MVS Resources, CICS Resources, IMS Resources, and NetView Resources	<i>MAINVIEW AutoOPERATOR Options User Guide</i>
Option 8: Basic Automation <ul style="list-style-type: none"> • Event Activity Statistics • Display/Modify Rules and Rule Sets • Continuous State Manager • Total Object Manager 	<p>In this book: Chapter 3, "Automation with Rules: The Rule Processor Application" through Chapter 10, "Using the Rule Set Overview Panel to Manage Rules in Rule Sets"</p> <p>See "Managing Critical Applications with Continuous State Manager" in the <i>MAINVIEW AutoOPERATOR Solutions Guide</i></p> <p><i>MAINVIEW Total Object Manager User Guide</i></p>
Option 8: Advanced Automation <ul style="list-style-type: none"> • Display/Modify EXEC Status • Time-Initiated EXEC Requests • Open Systems Procedural Interface (OSPI) 	<p>Chapter 13, "Managing EXECs Using the EXEC Management Application." and "Requesting Time-Initiated EXECs: TIMEXEC Application" on page 14-17 in this book</p> <p>See "Using OSPI" in the <i>MAINVIEW AutoOPERATOR Advanced Automation Guide</i></p>
Option 9: Dynamic Parameter Manager	<i>MAINVIEW AutoOPERATOR Customization Guide</i>
Using EXECs in MAINVIEW AutoOPERATOR	<i>MAINVIEW AutoOPERATOR Advanced Automation Guide</i>

Chapter 2 Describing Common Application Functions and Display Fields

This chapter describes functions and display fields that are common to all MAINVIEW AutoOPERATOR panels and applications. Use this chapter to learn how to

- navigate around the MAINVIEW AutoOPERATOR product, its options, and any other products you might have
- use to transfer to another application or product from an application in a product
- issue commands from MAINVIEW AutoOPERATOR to other products
- read the upper portion of all MAINVIEW AutoOPERATOR panels
- use program function keys

Requesting an MAINVIEW AutoOPERATOR Application

To select an application, enter the application number in the **OPTION** field of the MAINVIEW AutoOPERATOR Primary Option Menu or the MAINVIEW AutoOPERATOR Automation Menu and press **Enter**. A panel for that application is displayed. If a submenu of options is displayed, more panels are displayed one at a time as you make each selection.

Here are two shortcuts:

- To skip intervening panels, concatenate the option numbers.

For example, to proceed directly from the MAINVIEW AutoOPERATOR Primary Option Menu to the Event Activity Statistics application, enter

OPTION ===> 8.2

on the Primary Option Menu instead of entering **8** first and then selecting Option 2 from the Automation Menu.

- To proceed directly from one MAINVIEW AutoOPERATOR application to another MAINVIEW AutoOPERATOR application, enter an equal sign and the application's option number on the **COMMAND** line and press **Enter**.

For example, to proceed directly from the Event Activity Statistics application to the ALERT Management Facility, enter

COMMAND ===> =1

on the Event Activity Statistics panel and press **Enter** to display the ALERT Management Facility (Option 1 on the Primary Option Menu).

To return to the Event Activity Statistics application, use the **PF3/END** key to exit from the ALERT Management Facility.

Using Another Product from MAINVIEW AutoOPERATOR: Product Line Transfers

You can display and access some products applications from other applications with product line transfers. Use product line transfer commands to access another BMC Software product line you have installed without exiting from your current product application session.

To access another product, enter a valid product line transfer name on the **COMMAND** line. Valid product line transfer names are as follows:

Command	Product Accessed
AO	MAINVIEW AutoOPERATOR
CAO	MAINVIEW AutoOPERATOR for CICS option
IAO	MAINVIEW AutoOPERATOR for IMS option
MAO	MAINVIEW AutoOPERATOR for OS/390 option
CICS	MAINVIEW for CICS
DB2	MAINVIEW for DB2
IMS	IMS Management Facilities

To return to the initial product line, type either of the following commands on the **COMMAND** line:

Command	Description
INIT	returns to the initial menu displayed when the TS was invoked
RETURN	returns to the Primary Option Menu of the application most currently displayed

The INIT and RETURN commands are discussed on page 2-13. These commands can also be assigned to PF keys (see “Using Program Function (PF) Key Definitions in MAINVIEW AutoOPERATOR” on page 2-19).

Example 1

You can transfer from the CICS SYSTEM STATUS panel to the MAINVIEW for DB2 Analyzer Service — BFRPL (Buffer Pool) as shown in Figure 2-1.

Figure 2-1 **Example 1 of Product Line Transfer**

BMC Software ----- CICS SYSTEM STATUS -----	MAINVIEW AutoOPERATOR
COMMAND ==> DB2;P;BFRPL	TGT ==> CICSA
INTERVAL ==> 1	DATE --- 01/03/02
STATUS --- INPUT	TIME --- 17:09:00

Example 2

You can also transfer from the ALERT DETAIL panel to the SYSTEM STATUS panel of the MAINVIEW AutoOPERATOR for OS/390 option by typing the command shown in Figure 2-2:

Figure 2-2 Example 2 of Product Line Transfer

BMC Software ----- CICS SYSTEM STATUS ----- MAINVIEW AutoOPERATOR	
COMMAND ==> MAO;STA	TGT ==> SYSB
INTERVAL ==> 1	DATE --- 01/03/02
STATUS --- INPUT	TIME --- 17:09:00

To return to the ALERT DETAIL panel, press the **PF3/END** key until you return. Other methods are as follows:

- Enter **INIT** on the **COMMAND** line of the SYSTEM STATUS panel and press **Enter** to return to the MAINVIEW AutoOPERATOR Primary Option Menu.
- Enter **RETURN** on the **COMMAND** line of the SYSTEM STATUS panel and press **Enter** to return to the MAINVIEW AutoOPERATOR for OS/390 Primary Option Menu.

Entering **RETURN** a second time displays the MAINVIEW AutoOPERATOR Primary Option Menu.

Limitations

You can transfer to as many product lines as you want until you run out of storage.

If all product lines are not installed into common BMC Software libraries, you must ensure that the other product line libraries are concatenated in the BBI-TS CLIST and BBI-SS PAS JCL. The following library DDNAMEs are affected:

STEPLIB
BBILOAD
PNLLIB
MSGLIB

Using Another MAINVIEW AutoOPERATOR Application from MAINVIEW AutoOPERATOR: Application Transfers

Application transfer commands allow you to temporarily transfer from one application to another *within the same product line*. Enter the application name (or the appropriate abbreviation) on the **COMMAND** line and press the **Enter** key. Refer to “List of BBI Transfer Commands and Abbreviations for Application Names” on page 2-6 for application name abbreviations.

A transfer *within* an application also counts as an application transfer. For example, if you display the ALERT OVERVIEW PROFILE panel from the ALERT OVERVIEW panel, this counts as an application transfer.

Use the **PF3/END** key to exit out of each application that you transferred to. When the original application is displayed, it is not refreshed; press **Enter** to refresh the data.

Limitations

Only 10 transfers can be executed; this number includes transfers between applications and within applications.

Using Product Line Transfers in Conjunction with Application Transfers

Product transfer commands can be stacked with application transfer commands when you want to transfer from an application in one product line to an application in another product line. Use a semicolon to stack commands; for example:

Figure 2-3 Example of Stacking Product Line and Application Transfers

BMC Software ----- CICS SYSTEM STATUS -----	MAINVIEW AutoOPERATOR
COMMAND ==> DB2;AT	TGT ==> SYSB
INTERVAL ==> 1	DATE --- 01/03/02
STATUS --- INPUT	TIME --- 17:09:00

These commands, separated by a semicolon, transfer from the MAINVIEW AutoOPERATOR for CICS SYSTEM STATUS application (in the MAINVIEW AutoOPERATOR for CICS option) to the Active Timer Requests application (of the MAINVIEW for DB2 product line).

List of BBI Transfer Commands and Abbreviations for Application Names

The following tables list the BBI transfer commands and the valid abbreviations for application names.

Table 2-1 Transfer Commands for Full-Screen Applications

Application Transfer Command	Description
COD CODES	Messages and Codes List
CYC CYCLE	Service Refresh Cycle
FOC FOCAL	FOCAL POINT Overview Display
JOU JOURNAL	LOG Display
KEY KEYS	Program Function Keys
LOG	LOG Display
MSG	Messages and Codes List
REF REFRESH	Service Refresh Cycle
TI	Time Initiated EXEC Requests

Using the information in Table 2-2, enter the Product Line Transfer command listed in the first column, a semicolon, and an Application Transfer Command from the second column on any **COMMAND** line. You will get the panel listed in the third column if the product listed in the fourth column is installed.

Table 2-2 Application Transfer Commands (Part 1 of 6)

Product Line Transfer Command	Application Transfer Command	Description	Product
MAINVIEW AutoOPERATOR Base			
AO	ALE ALERTS	ALERT Overview	MAINVIEW AutoOPERATOR
AO	DPM	Dynamic Parameter Manager	MAINVIEW AutoOPERATOR

Table 2-2 Application Transfer Commands (Part 2 of 6)

Product Line Transfer Command	Application Transfer Command	Description	Product
AO	EMA	EXEC Management	MAINVIEW AutoOPERATOR
AO	EAS	Event Activity Statistics	MAINVIEW AutoOPERATOR
AO	EXEC	EXEC Management	MAINVIEW AutoOPERATOR
AO	MAS	Event Activity Statistics	MAINVIEW AutoOPERATOR
AO	MSG MSGSTAT	Event Activity Statistics	MAINVIEW AutoOPERATOR
AO	OSPI	OSPI Script Development	MAINVIEW AutoOPERATOR
AO	NV	NetView OPERATOR WORKSTATION	MAINVIEW AutoOPERATOR
AO	RUL RULES	Automation Control	MAINVIEW AutoOPERATOR
AO	SOF	Shared Object Facility	MAINVIEW AutoOPERATOR
AO	TI	Time-Initiated EXECs	MAINVIEW AutoOPERATOR
AO	XAL XALRTS	Alert Detail	MAINVIEW AutoOPERATOR
CICS Operator Workstation			
CAO	BROA BROADCAST	CICS Broadcast	MAINVIEW AutoOPERATOR
CAO	STA STATUS	CICS System Status	MAINVIEW AutoOPERATOR
CAO	DAT DATABASE	Database	MAINVIEW AutoOPERATOR for IMS
CAO	PR PROGRAM	Program	MAINVIEW AutoOPERATOR for IMS
CAO	REG REGION	IMS Regions	MAINVIEW AutoOPERATOR for IMS
MAINVIEW for CICS			
CICS	CMRTOOLS	MAINVIEW for CICS Tools Menu	MAINVIEW for CICS
CICS	CT	Current Traces	MAINVIEW for CICS
CICS	DM	Display Monitors	MAINVIEW for CICS

Table 2-2 Application Transfer Commands (Part 3 of 6)

Product Line Transfer Command	Application Transfer Command	Description	Product
CICS	DW	Display Warnings	MAINVIEW for CICS
CICS	EX EXEC VIEW svc parm1, parm2	Execute a MAINVIEW for CICS service with defaults or passed parameters	MAINVIEW for CICS
CICS	HIST HISTORY	MAINVIEW for CICS History Selection	MAINVIEW for CICS
CICS	HT	History Traces	MAINVIEW for CICS
CICS	PUT	MAINVIEW for CICS PUT Level	MAINVIEW for CICS
CICS	SD	Statistics and Defaults	MAINVIEW for CICS
CICS	SM	Start Monitor	MAINVIEW for CICS
CICS	ST	Start Trace	MAINVIEW for CICS
CICS	UGR UGRAPH	User Defined Graph Selection	MAINVIEW for CICS
MAINVIEW for DB2			
DB2	AN	Analyzer Display Services	MAINVIEW for DB2
DB2	AT	Active Timer Requests	MAINVIEW for DB2
DB2	CT	View Current Traces	MAINVIEW for DB2
DB2	DM	Display Monitors	MAINVIEW for DB2
DB2	DW	Display Warnings	MAINVIEW for DB2
DB2	GC	General Commands	MAINVIEW for DB2
DB2	GT	Graph Thread History	MAINVIEW for DB2
DB2	EX EXEC svc parm1, parm2	Execute a MAINVIEW for DB2 service with defaults or passed parameters	MAINVIEW for DB2
DB2	HT	HISTORY Traces	MAINVIEW for DB2
DB2	IO	I/O Analysis Options	MAINVIEW for DB2 (Version 3.1 and later)
DB2	CTIO	Current I/O Traces	MAINVIEW for DB2 (Version 3.1 and later)
DB2	HTIO	History I/O Traces	MAINVIEW for DB2 (Version 3.1 and later)
DB2	MN	Data Collection Monitors	MAINVIEW for DB2
DB2	PM	DB2 System Status	MAINVIEW for DB2
DB2	SD	Display Statistics and Defaults	MAINVIEW for DB2
DB2	SM	Start Monitors	MAINVIEW for DB2
DB2	ST	Start Application Trace	MAINVIEW for DB2

Table 2-2 Application Transfer Commands (Part 4 of 6)

Product Line Transfer Command	Application Transfer Command	Description	Product
DB2	VT	View Current Traces	MAINVIEW for DB2
IMS Operator Workstation			
IAO	DAT DATABASE	Database	MAINVIEW AutoOPERATOR for IMS
IAO	LINE	BTAM Lines	MAINVIEW AutoOPERATOR for IMS
IAO	LT LTERM	LTERMS	MAINVIEW AutoOPERATOR for IMS
IAO	ISC	ISC Links	MAINVIEW AutoOPERATOR for IMS
IAO	REG REGION	IMS Regions	MAINVIEW AutoOPERATOR for IMS
IAO	NO NODE	VTAM nodes	MAINVIEW AutoOPERATOR for IMS
IAO	STA STATUS	Status/Exception	MAINVIEW MAINVIEW AutoOPERATOR
IAO	TR TRANSACTION	Transaction	MAINVIEW MAINVIEW AutoOPERATOR
IAO	PR PROGRAM	Program	MAINVIEW AutoOPERATOR for IMS
MAINVIEW for IMS			
Note: MAINVIEW for IMS applies to both MAINVIEW for IMS and MAINVIEW for DBCTL.			
IMS	AN	Analyzer Display Services	MAINVIEW for IMS
IMS	AR	Data Entry Database Areas	MAINVIEW AutoOPERATOR for IMS
IMS	AT	Active Timer Requests	MAINVIEW for IMS
IMS	CT	View Current Traces	MAINVIEW for IMS
IMS	DB	Database	MAINVIEW AutoOPERATOR for IMS

Table 2-2 Application Transfer Commands (Part 5 of 6)

Product Line Transfer Command	Application Transfer Command	Description	Product
IMS	DE	Data Entry Databases	MAINVIEW AutoOPERATOR for IMS
IMS	DM	Display Monitor Requests	MAINVIEW for IMS
IMS	DW	Display Warnings	MAINVIEW for IMS
IMS	EXEC svc parm1, parm2	Execute a service with passed parameters	MAINVIEW for IMS
IMS	EX	Status/Exception	MAINVIEW AutoOPERATOR for IMS
IMS	GC	General Commands	MAINVIEW for IMS
IMS	HT	HISTORY Traces	MAINVIEW for IMS
IMS	MAINVIEW for IMS	MAINVIEW for IMS Performance Management	MAINVIEW for IMS
IMS	LINE	BTAM Lines	MAINVIEW AutoOPERATOR for IMS
IMS	MN	Data Collection Monitors	MAINVIEW for IMS
IMS	MS	Main Storage Databases	MAINVIEW AutoOPERATOR for IMS
IMS	PD	MAINVIEW for IMS Performance Management	MAINVIEW for IMS
IMS	PM	MAINVIEW for IMS Performance Management	MAINVIEW for IMS
IMS	RC	Fast Path Routing Codes	MAINVIEW AutoOPERATOR for IMS
IMS	SD	Display Statistics and Defaults	MAINVIEW for IMS
IMS	SM	Start Monitors	MAINVIEW for IMS
IMS	ST	Start Trace	MAINVIEW for IMS
IMS	STA STAT	IMS SYSTEM STATUS	MAINVIEW for IMS
IMS	VT	View Current Traces	MAINVIEW for IMS
MVS Operator Workstation			
MAO	DA	Address Spaces	MAINVIEW AutoOPERATOR for OS/390
MAO	DASD	DASD Status/Control	MAINVIEW AutoOPERATOR for OS/390

Table 2-2 Application Transfer Commands (Part 6 of 6)

Product Line Transfer Command	Application Transfer Command	Description	Product
MAO	DISP DISPLAY	Address Spaces	MAINVIEW AutoOPERATOR for OS/390
MAO	ENQ ENQUEUEES	Enqueue/Reserve	MAINVIEW AutoOPERATOR for OS/390
MAO	OPE OPERATOR	Operator Requests	MAINVIEW AutoOPERATOR for OS/390
MAO	OR	Operator Requests	MAINVIEW AutoOPERATOR for OS/390
MAO	REQ REQUESTS	Operator Requests	MAINVIEW AutoOPERATOR
MAO	RES RESERVES	Enqueue/Reserve	MAINVIEW AutoOPERATOR for OS/390
MAO	STA STATUS	System Status	MAINVIEW AutoOPERATOR for OS/390
MAO	TAP TAPE	Tape Status/Control	MAINVIEW AutoOPERATOR for OS/390
MAO	MAJ MAJNODE	VTAM Major Nodes	MAINVIEW AutoOPERATOR for OS/390
MAO	APPL	VTAM Applications	MAINVIEW AutoOPERATOR for OS/390
MAO	CDRM	VTAM CDRMs	MAINVIEW AutoOPERATOR for OS/390
MAO	CDRS CDRSC	VTAM CDRSCs	MAINVIEW AutoOPERATOR for OS/390
MAO	LINE	VTAM Lines	MAINVIEW AutoOPERATOR for OS/390
MAO	CLS CLSTR	VTAM Clusters	MAINVIEW AutoOPERATOR for OS/390
MAO	TERM TERMINAL	VTAM Terminals	MAINVIEW AutoOPERATOR for OS/390

Issuing Transfer Commands from CSM

To use transfer commands from within the CSM application, you must prefix the command with an equal sign (=). For example:

```
BMC Software ----- CSM Status Display ----- MAINVIEW AutoOPERATOR
COMMAND ==>  =XAL                                TGT ==> SYSB
Primary Commands: Locate      SYNChronize  CALendar
                  EXCeption  SORT/UNsort  Xref
:
```

Entering =XAL as shown above displays the ALERT Detail Panel from the CSM Status Display.

Using Command Prefixes

To issue commands, you can use special characters as command prefixes. The following table lists the special characters, the hexadecimal equivalents, and a description of what kind of command is generated.

Special Character	Hexadecimal Equivalent	Description
%	x'6C'	When used with an EXEC name, submits an EXEC.
¢	x'4A'	When used with an EXEC name, submits an EXEC.
#	x'7B'	When used with an MVS command, issues an MVS command.
.	x'4B'	When used with a BBI control command, issues a BBI command.
!	x'5A'	When used with an IMS command, issues an IMS transaction.
\$	x'5B'	Sends a message to an IMS Lterm.
/	x'6I'	Submits an IMS command or DBCTL command. When the command is for a DBCTL-only system, the DBCTL target must be specified in the BBI Journal target field.
?	x'6F'	Invokes a SYSPROG command when issued from a BBI-TS command line.

Exiting from Product and Application Transfers: Using INIT and RETURN

To exit from your product or application transfers, and return to your original application, enter the primary commands **INIT** (and then **RETURN**) on the **COMMAND** line.

The commands are as follows:

Command	Description
INIT	Returns to the first menu displayed when the BBI-TS was invoked.
RETURN	Returns to the Primary Option Menu of the application most currently displayed.

For example, if you have stacked the MAINVIEW AutoOPERATOR for OS/390 SYSTEM STATUS application over the MAINVIEW AutoOPERATOR ALERT application, using RETURN displays the Primary Option Menu for the MAINVIEW AutoOPERATOR for OS/390 option. Use RETURN again to return to the Primary Option Menu for MAINVIEW AutoOPERATOR.

All intermediate panels are bypassed.

If the request is made on the Primary Option Menu, the application from which the transfer was requested is displayed.

These commands can be assigned to PF keys (see “Program Function Keys Panel” on page 2-20).

Describing Common Application Fields and Functions

The first few lines of all MAINVIEW AutoOPERATOR panels are similar and look like Figure 2-4.

Figure 2-4 **Example of CICS System Status Panel**

BMC Software -----	CICS SYSTEM STATUS -----	MAINVIEW AutoOPERATOR
COMMAND ==>		TGT ==> CICSA
INTERVAL ==> 1		DATE --- 01/03/15
STATUS --- INPUT		TIME --- 17:09:00

The center of the top line always shows the name of the panel or application that you are currently using: CICS SYSTEM STATUS in Figure 2-4.

On all MAINVIEW AutoOPERATOR panels, input fields are shown with ==>. This arrow means that data can be entered in the field.

Display-only fields that show the date, the time, and other status-related information are shown with three dashes ---.

The following sections describe the various areas of Figure 2-4.

Describing the Short-Message Field

Short messages, such as edit messages, are displayed on the right side of the top line of the panel. In MAINVIEW AutoOPERATOR, when there are no short messages, the area reads MAINVIEW AutoOPERATOR or GENERAL SERVICES.

To see additional text for a short message, type **MSG** or **CODE** on the **COMMAND** line to access the Messages and Codes display.

Describing the Primary Command Line

Primary commands such as MAINVIEW AutoOPERATOR, MVS, JES2, IMS, CICS, DB2, and any application-specific primary commands, can be entered on the **COMMAND** line of a panel. Each application's description includes information about application-specific commands.

Under certain circumstances, you might want to issue a series of commands, which is called command stacking. To stack primary commands, type the commands on the **COMMAND** line and separate them by semicolons.

Example

```
1;1;LOG
```

This sequence stacks three commands.

Describing the Target Input Field

The current target is always shown on the right side of the panel, on the second line. To change targets, enter the name of the new target in the **TGT** field. When you enter a command, the command takes effect in the target shown. In an MSNF (multisystem network function) environment, the target can be remote or on the same system on which your BBI terminal session is running. Ask your MAINVIEW AutoOPERATOR administrator for a list of valid targets and their defaults.

Describing the INTERVAL Field: Refresh Mode Fields

The **INTERVAL ==>** field is an input field where you can specify how often you want a display refreshed when the application is in Refresh mode. Valid values for **INTERVAL** are 1 to 99 seconds.

When the application is initially started, the **INTERVAL** value is determined by the **INTERVAL** keyword in BBPROF member BBITSP00. If no value is specified in BBITSP00, the screen is refreshed every three seconds. For more information about BBPARM member BBITSP00, refer to the *MAINVIEW Common Customization Guide*.

The **STATUS ---** field shows the mode of the application:

INPUT indicates that the application is accepting input

To enter Refresh mode on the application after entering input, press the **PF6/PF18** key or enter **GO** on the **COMMAND** line.

RUN/RUNNING

indicates that the application is running, the panel is in Refresh mode, and no commands are accepted until the application is stopped and **STATUS --- INPUT** is displayed

To stop Refresh mode on an SNA terminal, press the **ATTN** Key.
To stop Refresh mode on a non-SNA terminal, press **RESET** and then press **PA1**.

Using Scroll Commands

MAINVIEW AutoOPERATOR provides scroll commands that operate similarly to the way IBM ISPF scroll commands operate. Use these scroll commands in MAINVIEW AutoOPERATOR applications and General Services.

On the **COMMAND** line, specify the amount that you want to scroll. Then press the UP key (**PF7/19**) or DOWN key (**PF8/20**).

COMMAND Line	Press PF7/19 to	Press PF8/20 to
M or MAX (Maximum)	scroll to the top	scroll to the bottom
1 to 9999 (number)	scroll x lines up	scroll x lines down
H (Half)	scroll half page up	scroll half page down
P (Page)	scroll full page up	scroll full page down
Note: These commands do not work with the PF keys PF10/22 (scroll right) and PF11/23 (scroll left). For these keys, the amount scrolled is not displayed.		

You can also scroll to the top or the bottom of the data by entering the **TOP** command or **BOTTOM** command and pressing **Enter**:

COMMAND ===> **TOP**

COMMAND ===> **BOT**

In some applications, for example, the General Service LOG DISPLAY, you can scroll to the left and right. Enter the number of columns that you want to scroll on the **COMMAND** line. To scroll that many columns left, press **PF10/22**. Scrolling to the left displays the origin or point of entry for each message on the Journal log. To scroll right, press **PF11/23**.

Splitting the BBI Terminal Session Screen

During a BBI Terminal Session (BBI-TS), you can split your current terminal display into two logical screen displays by pressing the SPLIT (**PF2/14**) key. The position of the cursor determines the position of the split.

By splitting the display, two panels can be displayed on one screen, allowing you to access two applications or menus. Splitting an application or a tutorial puts the current application on one side of the split and the Primary Option Menu (or ISPF Primary Option Menu if invoked under ISPF) on the other.

The active screen is indicated by the location of the cursor. To switch to the other screen, press the SWAP (**PF9/PF21**) key. To unsplit the screen and return to only one screen, end one of the applications by pressing the END (**PF3/15**) key.

Using BBI Control Commands

BBI control commands affect the current BBI-SS PAS and its resources. Refer to the *MAINVIEW Administration Guide* for information about BBI and BBI control commands.

Enter BBI commands on the **COMMAND** line of any MAINVIEW AutoOPERATOR application in this format:

.command keyword parameter

Each BBI control command must be entered with a period (.) prefix. Delimiters in the control command statement can be a blank, comma, or equal sign.

The following examples are the most frequently used BBI control commands. The command abbreviations are shown in bold type.

Example	Description
.C E 2109	Is the same as .CANCEL EXEC eid (where eid is the EXEC ID number as shown in DISPLAY EXEC and is always numeric). This command cancels an EXEC that is either queued or running.
Warning!	The CANCEL command causes an abnormal termination of the TSO/E EXEC command and of any other command or program that is currently running within the EXEC. The abnormal termination might result in resources, such as storage, being improperly cleaned up. Particularly, if the command or program does not explicitly issue a freemain for subpool 0 storage and relies upon task termination to clean up this storage, the storage will not be freed and an eventual private storage problem might be experienced, such as ABEND878 RC10.
.D A	Is the same as .DISPLAY ACTIVE ALL and writes the status of the BBI-SS PAS and its resources to the Journal log. Use LOG DISPLAY to see this information online.
.D E HIGH	Is the same as .DISPLAY EXEC HIGH and displays the high-priority EXECs.
.D V	Is the same as DISPLAY VPOOL and displays the EXEC statistics for the SHARED variable pools.
.H E	Is the same as HELP RESET and displays an explanation of the BBI RESET control command.
.HELP	Displays information on all the BBI control commands.
.D RULES	Indicates whether the Rule Processor is active.

Invoking a MAINVIEW AutoOPERATOR EXEC from the COMMAND Line

You can schedule an MAINVIEW AutoOPERATOR EXEC from the **COMMAND** line of any MAINVIEW AutoOPERATOR panel. This action is called a user-initiated EXEC. For more information about MAINVIEW AutoOPERATOR EXECs and other ways to schedule EXECs, refer to the *MAINVIEW AutoOPERATOR Advanced Automation Guide*. To schedule EXECs, enter the EXEC name prefixed with a % (the percent sign) or a ¢ (the cent sign) on the **COMMAND** line.

For example:

COMMAND ===> %PAYROLL START

schedules a general EXEC named PAYROLL and passes a positional parameter value of START.

Sending BBI-SS PAS Journal Log Messages

The BBI-SS PAS Journal log includes all messages and commands issued by MAINVIEW AutoOPERATOR, as well as the system responses to these messages and commands.

You can send messages to the BBI-SS PAS Journal log by prefixing the message with an asterisk (*); for example:

COMMAND ===> *SHIFT CHANGE AT 1600

To view the BBI-SS PAS Journal log messages, use the General Service LOG DISPLAY.

Using Program Function (PF) Key Definitions in MAINVIEW AutoOPERATOR

A set of program function (PF) key definitions is maintained for each BMC Software product line and the General Service LOG DISPLAY application, so that PF key usage is unique to each product.

You can modify the PF key definitions by using the General Service KEYS option or by entering **KEYS** on the **COMMAND** line of the current application. When you enter KEYS, an input panel is displayed that shows the current default values, as shown in Figure 2-5 on page 2-20.

Figure 2-5 Program Function Keys Panel

```

BMC Software ----- PROGRAM FUNCTION KEYS ----- GENERAL SERVICES
COMMAND ==>

The current PF Key assignments for BBI are as follows:
PF1 ==> HELP
PF2 ==> SPLIT
PF3 ==> END
PF4 ==> PRINT
PF5 ==> EXPAND
PF6 ==> GO
PF7 ==> UP
PF8 ==> DOWN
PF9 ==> SWAP
PF10 ==> LEFT
PF11 ==> RIGHT
PF12 ==> RETRIEVE

To save changes
into profile,
enter SAVE on
the command line.

When executing under ISPF, these labels may be displayed using PFSHOW
PF1 LABEL ==>      PF2 LABEL ==>      PF3 LABEL ==>
PF4 LABEL ==>      PF5 LABEL ==>      PF6 LABEL ==>
PF7 LABEL ==>      PF8 LABEL ==>      PF9 LABEL ==>
PF10 LABEL ==>     PF11 LABEL ==>     PF12 LABEL ==>

Press ENTER to display keys 13 - 24.  Enter END command to EXIT.

```

In Figure 2-5, the initial values as distributed by BMC Software are displayed. Twenty-four keys can be defined. This first panel displays the current values for the first 12 keys. Press **Enter** to display the current values for keys 13 through 24, as instructed on the screen.

Assigning Commands to Program Function Keys

Each set of 24 PF key definitions can be changed for a single terminal session, or they can be saved across multiple sessions. Any valid system command or BMC Software product command can be assigned to a PF key. Any input that can be entered in the first input field of a display, such as the **COMMAND** or **OPTION** field, can also be assigned as a PF key value. PF keys can also be combined with command line input. For example, if you enter a **5** on the **COMMAND** line and press **PF8** (DOWN), you generate a DOWN 5 command.

To change a PF key assignment, select the KEYS option (K) or enter the KEYS command and

- enter the new value over the displayed value
- assign NOP to disable a PF key
- blank out the current value to restore the default definition

The changes remain in effect until you end the terminal session. Enter **SAVE** on the **COMMAND** line to save the your PF key assignments in your BBPROF data set. After you save this information, it is named AOPFK in your BBIPROF data set.

Assigning Labels to PF Keys

Enter the ISPF command **PFSHOW** on the **COMMAND** line to display labels assigned to the PF keys. The PF key definitions or labels are then displayed on the last two lines of your current panel, as shown in Figure 2-6.

Figure 2-6 PF Keys Label Display

PF1=HELP	2=SPLIT	3=END	4=PRINT	5=LOG	6=GO
PF7=UP	8=DOWN	9=SWAP	10=LEFT	11=RIGHT	12=RETRIEVE

If there is no label assignment, the first eight characters of the key value are shown.

To assign labels to keys, follow these procedures:

1. Use the **KEYS** command or **K** Option from the Primary Option Menu to display the input panel as shown in Figure 2-5 on page 2-20.
2. Enter the value in the **LABEL** field of the input panel.
3. Press **Enter** to alternate between the input panel for PF keys 1 through 12 and 13 through 24.

Changes are in effect until the end of the terminal session. Save your changes in your BBPROF data set by using the **SAVE** command.

To turn off the PF key display, enter the command **PFSHOW OFF**.

Chapter 3 Automation with Rules: The Rule Processor Application

This chapter

- introduces basic terms and concepts for Rules that you want to use
- describes how to find information about Rules quickly in this book

Read this chapter to learn basic concepts and terms that will help you write Rules that perform automation on your system. For information about creating Rules for MQSeries events, refer to the *MAINVIEW AutoOPERATOR for MQSeries Installation and User Guide*.

What the Rule Processor Is

The Rule Processor applications provide panels that you can use to create Rules to perform automation tasks such as

- suppress messages that appear on operator consoles
- provide automatic replies to certain events
- automatically send MAINVIEW AutoOPERATOR ALERTs based on events

To best understand Rules and how Rules can help perform automation on your system, you must understand the following basic concepts:

- Events, page 3-2 and page 4-1
- Rules, page 3-3 and page 6-1
- Selection criteria, page 3-3 and page 6-2
- Action specifications, page 3-3 and page 6-13
- Automation strategy, page 3-10.

What Events Are

Events are occurrences in the system, such as messages, commands, and ALERTs, that are eligible to be automated.

In general, events are differentiated depending on where they originated in the system. Some examples of events that MAINVIEW AutoOPERATOR supports are MVS write-to-operator messages (WTOs), CICS transient data queue (TDQ) messages, BBI-SS PAS Journal messages, and MVS commands. MAINVIEW AutoOPERATOR regards each of these events as a different event type, and MAINVIEW AutoOPERATOR supports a total of 12 system-based events.

Each event also has a unique set of attributes. These attributes are used by the Rule Processor to recognize an event and perform automation against it. To support all event types, MAINVIEW AutoOPERATOR provides separate panels for each event type where only the applicable attributes are displayed.

MAINVIEW AutoOPERATOR also supports an event called TIME. With TIME events, you can cause automation to occur based not on a system event but on the time of day. For example, you can create a Rule to automate a task every 10 minutes from 1:00 P.M. to 3:00 P.M.

Which event types are available for automation on your system depends on your configuration of MAINVIEW AutoOPERATOR products. Refer to “Describing Events” on page 4-1 for more complete information about events.

What a Rule Is

A Rule is basically a two-part conditional statement: when the conditions of the first part of the statement are met, the actions of the second part of the statement are performed. The two parts of the statement are called

- selection criteria
- action specifications

Selection Criteria

Selection criteria are user-specified event attributes the Rule uses to recognize an event that will be automated.

When you create a Rule, you must choose specific attributes of the event that the Rule will try to match to incoming events. When the specified selection criteria match that of an incoming event, the Rule fires and the automation action will be taken (see “Action Specifications” below).

Each event type has its own version of a selection criteria panel, which contains only the applicable attributes for that event. For more information about selection criteria, refer to “Step 1. Using Selection Criteria Fields” on page 6-2.

Action Specifications

The second part of a Rule is a set of user-specified automation actions (also called action specifications).

When a Rule’s selection criteria matches an incoming event and the Rule fires, the user-specified automation actions are performed. This action is also called *handling* the event.

Some examples of automation actions are suppressing a message from appearing on the console or issuing an ALERT that notifies an operator of an exceptional situation that requires operator intervention.

Each event type has its own version of an action specification panel that contains all the applicable actions that a Rule can perform for the event. For more information about action specifications, refer to “Step 3. Using Action Specification Fields” on page 6-13.

In summary, a Rule screens incoming events for matches to user-specified selection criteria and, when the attributes of an event match the selection criteria, the Rule fires and performs the user-specified automation actions.

Where Rules Are Kept

Rule Sets

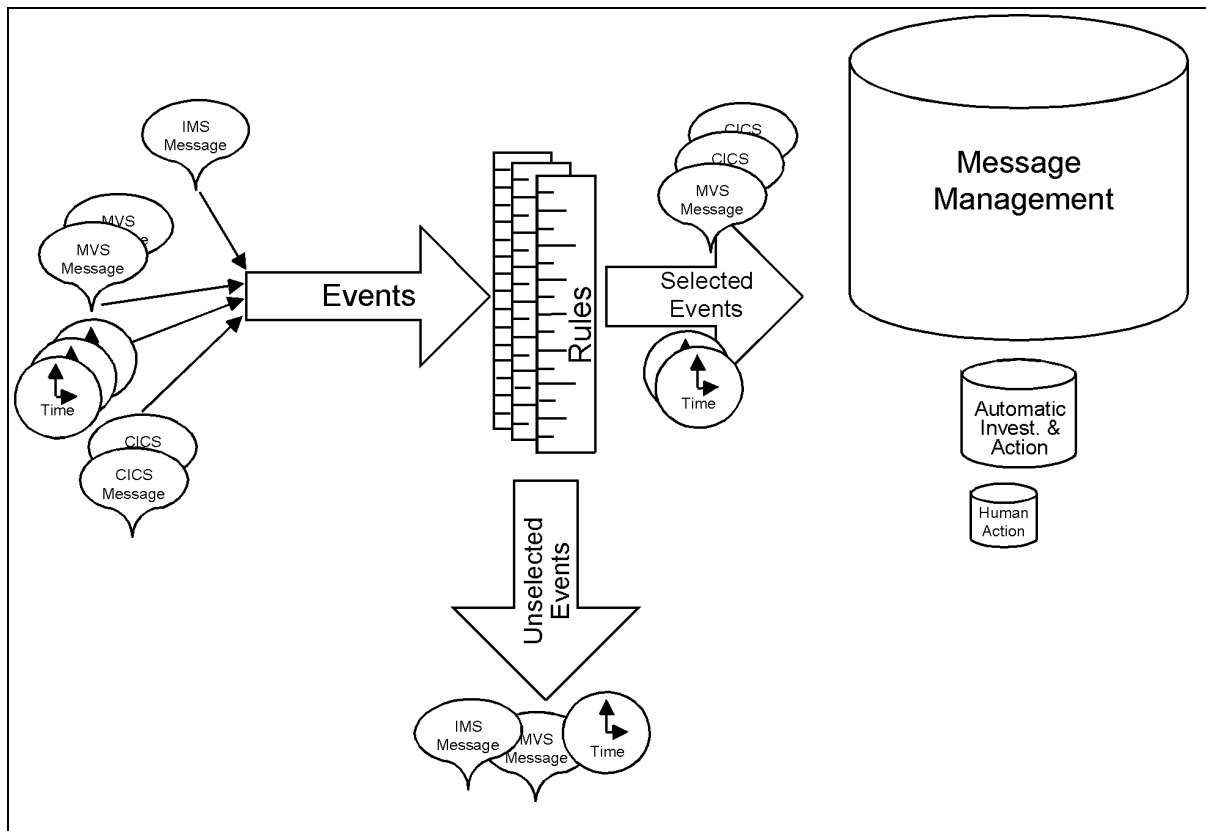
The Rule Processor keeps groups of Rules in Rule Sets. A Rule Set is simply a way to organize and categorize groups of Rules. The Rule Processor supports multiple Rule Sets. Each Rule Set has its own name and is a member of a partitioned data set (PDS) that resides in storage and is loaded every time the BBI-SS PAS is cold-started (or when the .SET RULE or .RESET RULES command is issued).

An entire Rule Set can be enabled (active) or disabled (inactive). When a Rule Set is disabled, none of the individual Rules within the Rule Set can perform any automation tasks.

Individual Rules also can be enabled or disabled, so, even when a Rule Set is enabled, a Rule within the Rule Set may be disabled and thus not performing any automation tasks.

For more information about Rule Sets, refer to “Grouping Rules into Rule Sets” on page 3-9 and Chapter 9, “Managing Rules and Automation Using the Automation Control Panel.”

Figure 3-1 on page 3-5 shows how the Rule Processor (represented by the rulers) automates events.

Figure 3-1 Automating Events

What Actions a Rule Can Take

Some of the actions that a Rule can take are

- suppress a message from appearing on the console
- create ALERTs in response to a system event
- execute MVS, IMS, BBI-SS PAS, or CICS commands at predefined times with TIME-initiated Rules
- set SHARED variables
- send messages to TSO users
- issue WTO messages
- reword messages or ALERTs
- route messages to a specific console ID or name

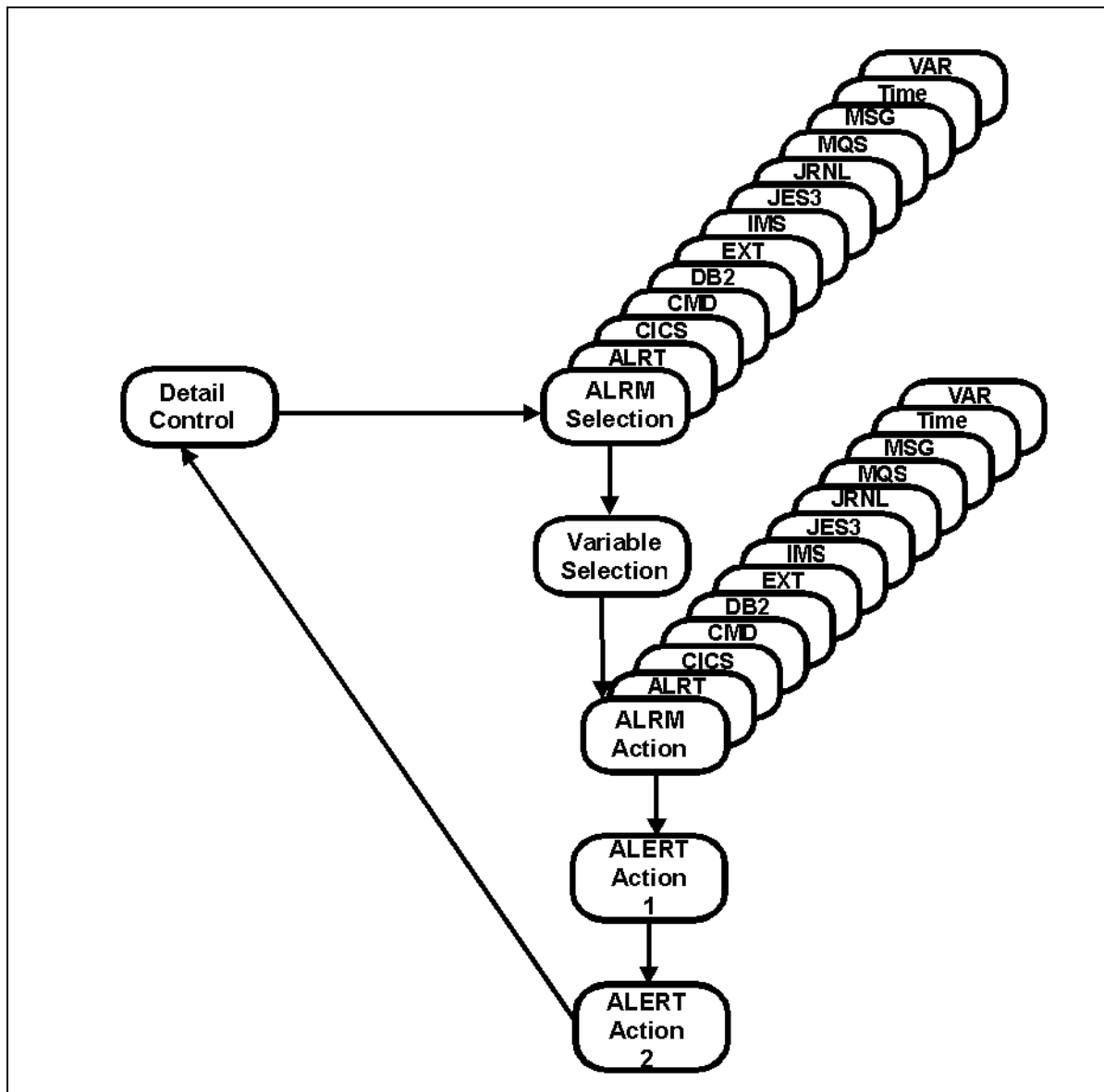
- schedule EXECs to run
- notify an outboard pager
- delete an operator message

How to Create a Rule

You can select events for which to create Rules by examining the flow of events on your system or by selecting events from the MAINVIEW AutoOPERATOR application — Event Activity Statistics. For more information about selecting events from the Event Activity Statistics application, refer to “Identifying Events for Automation with Rules: Using the Event Activity Statistics Application” on page 4-5.

Regardless of how you select events for automation, Rules are created by using panels in the Rule Processor. A series of six panels are displayed; refer to Figure 3-2 on page 3-7, which illustrates the sequence of panels.

Figure 3-2 Overview of Rules Panels



All Rule creation begins on the Rule Processor Detail Control panel. One of the things you specify on the Rule Processor Detail Control panel is the event type that you are creating a Rule for.

This specification is important because, for each event type, there are *different versions* of the Selection Criteria and Action Specification panels where only the applicable attributes and actions for each event type are listed.

On the Selection Criteria panels, you specify information about the event that must match with a Rule before the Rule is fired. On the Action Specification panels, you specify the actions the Rule should take when it is fired.

Optionally, you may use a second (additional) selection criteria panel called the Variable Dependencies panel or a second (additional) set of action specification panels called the ALERT Action(s) panels.

In other words, depending on what event you create a Rule for, different selection criteria items and different actions are displayed on the Selection Criteria panel and the Action Specification panel.

Table 3-1 provides a brief synopsis of each of the six panels that you can use while creating a Rule.

Table 3-1 Description of Panels Used to Create a Rule

Panel Name	Allows You To	See Page
Rule Processor Detail Control	Assign an ID to the Rule, specify the event type, set the maximum rate at which you will allow the Rule to fire, and so on.	5-1
Selection Criteria	Specify the conditions and attributes the event must match before the Rule will fire. Although some criteria are common to all events, some selection criteria apply only to certain events. Therefore, each event type has a different version of the Selection Criteria panel that contains only the attributes that apply for that specific event type.	6-2
Variable Dependencies	<i>(optional)</i> Specify the conditions of additional variables that must exist and be met before the Rule can fire. Conditions on this panel are used as secondary selection criteria for an event. For a Rule to fire, the conditions on both the Selection Criteria panel <i>and</i> the Variable Dependencies panel must be met. This panel is identical for all event types.	6-7
Action Specification	Specify what actions the Rule takes once it is fired. Although there are some actions that are common to all events, some actions apply only to certain events. Therefore, each event type has a different version of the Action Specification panel that contains only the attributes that apply for a specific event type.	6-13
Alert Action(s) I and Alert Action(s) II	<i>(optional)</i> Create an MAINVIEW AutoOPERATOR ALERT from a Rule. The Rule Processor has two panels that you can use to create an MAINVIEW AutoOPERATOR ALERT from a Rule. When an ALERT is specified as part of a Rule's definition and the Rule fires, it performs the actions on both the Action Specification panel <i>and</i> issues an ALERT using information filled in on the Alert Action(s) panels. Some events have a slightly different set of Alert Action(s) panels. Refer to "Step 4. Creating ALERTs as Additional Action Specification" on page 6-20 for more information.	6-20

How to Begin Identifying Events for Automation

The Rule Processor provides the Event Activity Statistics application that displays most of the events eligible for automation detected on your system.

You can use this application as a starting point to identify and select events for which to write Rules or for when you want to see the frequency of events on your system. Refer to “Identifying Events for Automation with Rules: Using the Event Activity Statistics Application” on page 4-5 for more information.

The operators and system programmers might also be able to readily identify system events that they regularly have to perform standard actions for which would be good candidates for automation with MAINVIEW AutoOPERATOR Rules.

For these events, you immediately can begin creating Rules with the Rule Processor Detail Control panel. Refer to Chapter 5, “Creating Rules for Events: Using the Rule Processor Detail Control Panel” for more information.

How to Manage and Implement Basic Automation with Rules

There are two phases to creating automation with Rules. The more basic method is to use the panels to create Rules to attain automation based on certain system events. However, you also need to think about your automation from a wider point of view. Do you want automation to suppress a large number of messages? Do you want to reroute messages? Create ALERTs based on system events which might require operator intervention?

This section explains how you can manage and control your automation once you have Rules and Rule Sets defined.

Grouping Rules into Rule Sets

The Rule Processor keeps groups of Rules in *Rule Sets*. A Rule Set is simply a way to organize and categorize groups of Rules. The Rule Processor supports multiple Rule Sets. Each Rule Set has its own name and is a member of a partitioned data set (PDS) that resides in storage and is loaded every time the BBI-SS PAS is cold-started (or when the .SET RULESET or .RESET RULES command is issued).

An entire Rule Set can be enabled (active) or disabled (inactive). When a Rule Set is disabled, none of the individual Rules within the Rule Set can perform any automation tasks.

Individual Rules also can be enabled or disabled, so, even when a Rule Set is enabled, a Rule within the Rule Set might be disabled and thus not performing any automation tasks.

When you plan which events you want to automate, you might want to consider grouping Rules that perform similar functions together in the same Rule Set. For example, BMC Software distributes a sample Rule Set that contains Rules whose primary automation action is to suppress messages.

Or you may decide to group Rules that react to the same event type in their own Rule Set. You also need to define a unique name for each Rule Set.

Therefore, you should first consider what categories your Rules might fall under and how you will name the Rule Sets. Then, your site should determine a standard for creating and using Rule Sets.

Once you have developed your Rules and Rule Sets, you can start thinking about *automation strategy*.

What Automation Strategy Is

You could have a situation where an event matches the selection criteria for *more than one Rule* and you might not want all those Rules to fire in response to a single event. Your automation strategy determines whether all the Rules in all the Rule Sets that match the event are fired to handle that event. The Automation Strategy can also be set so that not all the Rules fire.

Refer to “Choosing an Automation Strategy” on page 9-11 for a complete discussion about how to set Automation Strategy.

Why Automation Strategy Is Important

Automation Strategy is important because regardless of how many Rules or how few Rules you create for automation, the strategy you set will determine how effective the Rules are. The following sections describe the applications and panels that allow you to manipulate Rules and Automation Strategy.

Using the Automation Control Application:

The Automation Control application displays a list of the Rule Sets you have created and displays an overview of how your automation is set up. This application shows

- whether automation is active (you can activate/deactivate automation from this panel)
- what automation strategy is set
- statistics regarding how many events are eligible for automation, how many were already handled by Rules, what the arrival rate of events is, and so on
- a list of all the Rule Sets and their status

Use this application to manage the Rule Sets and basic automation using Rules.

To Read More About	See Page
Using the Automation Control panel to see how well automation is running on your system	9-1

Using the Rule Set Overview Application:

Use the Rule Set Overview application to

- see all of the Rules within a specific Rule Set and their status
- set the INDIVIDUAL Automation Strategy for a Rule Set

To Read More about	See Page
using the Rule Set Overview panel to manage and modify Rules within a Rule Set	10-1

Once Rules and Rule Sets are created, they are kept in extended common storage. You can save Rules to disk so that they can be recalled after subsystem cold starts.

How to Qualify Displays in the Rule Processor Applications

Throughout the panels in the Rule Processor applications, you will see column headings that are underlined; for example, in the Event Activity Statistics panel:

```

BMC Software ----- Event Activity Statistics ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                     TGT ==>  SYSA
Activated at: 08-FEB-01 10:06:24 Total Events: 52      DATE --- 01/02/08
Rule Set to be Updated ==> AAORUL00 Sort Criterion: NONE TIME --- 10:11:47
Line CMDS - (S)elect
LC      Count Handled  Type Text-ID/Description                               Unique - 510
:

```

The underlined areas under **Type** and **Text-ID/Description** are input masking fields where you can enter a text string that will qualify (or mask) the display to show specific information.

These input areas appear in many of the Rule Processor panels. For example, in the Event Activity Statistics panel, to see all the events with a type of CMD, enter the characters **CMD** in the field under **Type**:

```

:
LC      Count Handled  Type Text-ID/Description                               Unique - 510
:                               CMD
:                               -----
:

```

and press **Enter**. The display will show only those events with a Type of **CMD**. Use this technique to mask any display of data in any of the Rule Processor panels where the column headings have input areas.

In the input areas, you can also use the wildcard characters asterisk (*) or plus sign (+). Refer to “Using Pattern Matching on Selection Criteria Panels” on page 8-2 for more information about how to use wildcard characters.

Where to Go from Here: Finding Information Quickly

The next several chapters are organized sequentially, based on the following major subjects:

To	See
learn about events	<p>“Describing Events” on page 4-1</p> <p>This chapter defines what events are and which MAINVIEW AutoOPERATOR product components you need to have for each event type.</p>
see a display of all the events eligible for automation	<p>“Identifying Events for Automation with Rules: Using the Event Activity Statistics Application” on page 4-5</p> <p>This chapter describes how you can use the Event Activity Statistics application when you want to see all the events eligible for automation on your system and select an event right off the panel to automate.</p>
create Rules with the Rule Processor applications	<ul style="list-style-type: none"> Chapter 5, “Creating Rules for Events: Using the Rule Processor Detail Control Panel” <p>This chapter describes how to use the initial panel in creating a Rule.</p> <ul style="list-style-type: none"> Chapter 7, “Creating Rules: Examples” <p>This chapter describes the additional panels you can use to create Rules.</p> <ul style="list-style-type: none"> Chapter 7, “Creating Rules: Examples” <p>This chapter describes the Selection Criteria and Action Specification panels for each event type, sorted alphabetically by event type.</p> <ul style="list-style-type: none"> Chapter 8, “Creating More Powerful Rules” <p>This chapter describes how to use pattern matching and variables to create more powerful and flexible Rules.</p> <p>Although basic principles exist for creating a Rule, actually creating Rules means that you have to specify information on several panels. For this reason, several chapters cover this material.</p>
Manage your Rules and automation	<ul style="list-style-type: none"> Chapter 9, “Managing Rules and Automation Using the Automation Control Panel” Chapter 10, “Using the Rule Set Overview Panel to Manage Rules in Rule Sets” <p>These chapters describe how you can implement and control your Rules and Rule Sets.</p>

Chapter 4 Describing Events

This chapter describes

- what an event is
- which MAINVIEW AutoOPERATOR option is required for certain events
- how to identify events for automation with the Event Activity Statistics application
- special events

What Events Are

Events are occurrences in the system, such as messages, commands, and ALERTs, that are eligible to be automated.

In general, events are differentiated based on where they originated in the system. Some examples of events that are supported by MAINVIEW AutoOPERATOR are MVS write-to-operator messages (WTOs), CICS transient data queue (TDQ) messages, BBI-SS PAS Journal messages, and MVS commands. MAINVIEW AutoOPERATOR regards each of these events as a different event type and MAINVIEW AutoOPERATOR supports a total of 13 system-based events.

Which event types are available for automation on your system depends on your configuration of MAINVIEW AutoOPERATOR options and other BMC Software products. To help you determine which events might be available on your system, Table 4-1 describes

- the event
- the origin or cause of the event
- the product option required for the event type to be eligible for automation
- whether statistics are available for the event in the Event Activity Statistics application

Note that statistics are kept only when the product or option is installed and operational on your system.

For information about special circumstances that can affect event types, refer to “Describing Special Event Types: DB2, EXT, TIME, and VAR” on page 4-12.

Table 4-1 Product Requirements for Event Availability (Part 1 of 3)

Event Type	Caused By	Product or Option Required	Event Statistics Available?
ALRT	the creation of an MAINVIEW AutoOPERATOR ALERTs. MAINVIEW AutoOPERATOR ALERTs can be created by an MAINVIEW AutoOPERATOR EXEC or by the Rule Processor.	Any MAINVIEW AutoOPERATOR	Yes
ALRM	alarm messages created by the MAINVIEW Alarm Manager.	Any MAINVIEW AutoOPERATOR	Yes

Table 4-1 Product Requirements for Event Availability (Part 2 of 3)

Event Type	Caused By	Product or Option Required	Event Statistics Available?
CICS	<p>CICS transient data queue messages</p> <p>Messages are intercepted from the CICS transient data queue (TDQ). These messages are seen by the MAINVIEW AutoOPERATOR transient data exit in CICS.</p> <p>Restrictions: CICS can generate multiline messages queued to the transient data queue (application programs typically cannot do this generation).</p> <p>When any line of a multiline message is suppressed in the TDQ (XTDOUT) exit, all subsequent lines of the multiline message are discarded and not presented to the XTDOUT exit. This restriction is due to the design of the CICS XTDOUT exit.</p> <p>Therefore if a Rule fires that handles a CICS message and has 'Display at Destination = NO' specified, all remaining lines of the multiline message are discarded and not seen by the Rules Processor.</p> <p>For example, you cannot suppress a part of any multiline CICS message and still expect to receive the rest of the multiline message in a Rule.</p>	MAINVIEW AutoOPERATOR for CICS	Yes
CMD	commands processed by the MVS subsystem interface	MAINVIEW AutoOPERATOR for OS/390	Yes
DB2	<p>DB2 generated messages</p> <p>Messages are sent from a DB2 subsystem. Refer to "Describing Special Event Types: DB2, EXT, TIME, and VAR" on page 4-12 for more information about this event type.</p>	MAINVIEW for DB2	Yes
EXT	<p>externally generated messages</p> <p>External messages directed at the BBI-SS PAS using SUBSYS= parameter on a DD statement in JCL. Refer to "Describing Special Event Types: DB2, EXT, TIME, and VAR" on page 4-12 for more information about this event type.</p>	Any MAINVIEW AutoOPERATOR	Yes

Table 4-1 Product Requirements for Event Availability (Part 3 of 3)

Event Type	Caused By	Product or Option Required	Event Statistics Available?
IMS	<p>IMS MTO generated messages</p> <p>System messages sent to the IMS Master Terminal, and IMS commands and responses.</p> <p>Note: IMS does not route messages sent to the master LTERM by application programs through the AOIEXIT. Therefore, these messages are not input to the Rule Processor and are not eligible for automation.</p>	MAINVIEW AutoOPERATOR for IMS	Yes
JES3	JES3 generated messages	MAINVIEW AutoOPERATOR for OS/390	Yes
JRNL	<p>BBI Journal generated messages</p> <p>These messages come from BBI products and the IMFEXEC MSG statement.</p>	Any MAINVIEW AutoOPERATOR	Yes
MSG	<p>WTOS and WTORs</p> <p>These messages originated as MVS WTOS (write-to-operator) and WTORs (write-to-operator with response).</p>	MAINVIEW AutoOPERATOR for OS/390	Yes
MQS	<p>events that originated as MQSeries events</p> <p>For more information, refer to the <i>MAINVIEW AutoOPERATOR for MQSeries Installation and User Guide</i>.</p>	MAINVIEW AutoOPERATOR for MQSeries	Yes
TIME	<p>time-initiated events</p> <p>These Rules are fired based on the time of day.</p>	Any MAINVIEW AutoOPERATOR	No
VAR	the creation, deletion, or change in value of a variable in the SHARED variable pool	Any MAINVIEW AutoOPERATOR	No

As this table shows, MAINVIEW AutoOPERATOR keeps statistics for most event types that you can view with the Event Activity Statistics application. Use the Event Activity Statistics application to see easily which events occur more frequently and, therefore, might be good candidates for automation with Rules. For more information, refer to “Identifying Events for Automation with Rules: Using the Event Activity Statistics Application” on page 4-5.

Identifying Events for Automation with Rules: Using the Event Activity Statistics Application

This section describes

- how to access and use the Event Activity Statistics Application
- event types

The Event Activity Statistics application is a facility that monitors and displays MAINVIEW AutoOPERATOR event traffic. Use this application when you want to display events available for automation by Rules. You can select any of the events shown on this panel and write a Rule for it.

Accessing the Event Activity Statistics

Choose the Event Activity Statistics application, Option 1, from the Automation Menu (shown in Figure 4-1).

Figure 4-1 Automation Menu

```
BMC Software ----- AUTOMATION MENU -----AutoOPERATOR
OPTION  ===>                                DATE    -- 2003/10/09
                                              TIME     -- 17:48:18

Basic Automation:
  1  Event Activity Statistics
  2  Display/Modify Rules and Rule Sets
  3  Continuous State Manager - Global Overview
  4  Total Object Manager

Advanced Automation:
  6  Shared Object Facility
  7  Display/Modify EXEC Status
  8  Time-Initiated EXEC Requests
  9  Open Systems Procedural Interface (OSPI)

                                           PF1/13  HELP  PF3/15: EXIT

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```

Figure 4-2 on page 4-6 shows an example of the Event Activity Statistics application.

Figure 4-2 Event Activity Statistics Panel

BMC Software ----- Event Activity Statistics -----					MAINVIEW AutoOPERATOR	
COMMAND ==>					TGT ==> AO62	
Activated at: 13-FEB-03 09:00:19					Total Events: 17,065	
Rule Set to be Updated ==> AAORUL00					Sort Criterion: NONE	
Line CMDS - (S)elect					DATE --- 03/02/13	
LC Count Handled Type Text-ID/Description					TIME --- 10:48:38	
					Unique-	510
—	21	21	MSG	PM0010I BBI/PM INITIALIZATION COMPLETE	AO6	
—	27	0	ALRT	PM0010I BBI/PM INITIALIZATION COMPLETE	AO6	
—	1	0	JRNL	PM2302I BBI JOURNAL(2) SELECTED FOR USE		
—	1	0	JRNL	PM3403I SS IMAGE LOGGING INACTIVE - NO DD STATEMENT		
—	1	0	JRNL	PM0215I ATTEMPTING TO ESTABLISH BBI CONNECTIONS		
—	1	0	JRNL	XS4201E BBI/XS OPEN FAILED FOR VTAM ACB		
—	1	0	JRNL	XS4201I VTAM APPLID=\$AO41 ,ACBERFLG=5A		
—	5	0	JRNL	PM0503W BBI/CONNECTION FAILED FROM \$AO62 TO \$A		
—	1	0	JRNL	PM0216I BBI CONNECTIONS COMPLETED FOR 000 LINK(S)		
—	1	0	JRNL	EM0110I SYSTSIN DATASET WILL BE DYNAMICALLY ALLOCATE		
—	1	0	JRNL	EM0109I SYSTSPRT DATASET WILL BE DYNAMICALLY ALLOCAT		
—	1	0	JRNL	DP1113I SHARED OBJECT FACILITY INITIALIZED		
—	1	0	JRNL	SM2042I NETVIEW COMMUNICATIONS INTERFACE IS INITIALI		
—	1	0	JRNL	AA0229W UNABLE TO LOAD JES2MAO CSECT		
—	1	0	JRNL	AU4224E RULESCAN= FOUND IN BBISSP00 IS OBSOLETE, IGN		
—	1	0	JRNL	AMTIN1I SYSPROG SERVICES INITIALIZATION, RELEASE 3.2.0		
—	1	0	JRNL	AA1113I AUTOOPERATOR RELEASE 6.2.B INITIALIZED		
—	1	0	JRNL	SM0200W CMRLOAD NOT FOUND		
—	1	0	JRNL	SS0975I BBI/SS -AO62- COLD START COMPLETE		
—	1	1	JRNL	PM0010I BBI/PM INITIALIZATION COMPLETE		

Statistical information about events shown on this panel is accumulated since the last BBI-SS PAS cold start or since the last time the BBI command:

.RESET STATS

was issued to reset statistics. For more information about statistics, refer to the field description of the field **UNIQUE** on page 4-12.

The Count Column

Note that the **Count** column shows how many times the event has occurred since the last BBI-SS PAS cold start (or since the last time the BBI command **.RESET STATS** command was issued). Use the numbers in this column to help you decide which events (based on their occurrence frequency) might be good candidates for automation with Rules.

The Handled Column

If you have any automation already enabled, the **Handled** column shows how many times a Rule fired and handled the event.

Masking the Display

You can sort the display with the **Type** and **Text-ID/Description** fields to selectively show events by event type or text-ID.

1. Enter a text-string under either the **Type** column or **Text-ID/Description** column.
2. Press **Enter**.
3. The display is sorted to show entries that match the text-string that you entered.

To see all the available data on this display, you can scroll both left and right as well as up and down on this panel.

Refer to “Using Primary Commands” on page 4-8 for more information about using primary commands; refer to “How to Qualify Displays in the Rule Processor Applications” on page 3-12 for more information about masking.

Viewing Events

The events on this panel can be sorted with primary commands to show information such as which events make up most of your event traffic.

For example, if you enter

SHOWPER|SP 50

and press **Enter** on the Event Activity Statistics panel, the display will show only the events that make up 50% of the event traffic. The following figure shows an example of the Event Activity Statistics after SP 50 was entered.

```

BMC Software ----- Event Activity Statistics ----- MAINVIEW AutoOPERATOR
COMMAND ==> SP 50                                     TGT ==> AO63
Activated at: 13-FEB-01 09:00:19 Total Events:      17,065  DATE --- 01/02/13
Rule Set to be Updated ==> AAORUL00 Sort Criterion: NONE  TIME --- 10:48:38
Line CMDS - (S)elect
LC      Count  Handled  Type Text-ID/Description                                Unique-      510
-----
-        522      0  ALRT IST314I  END
-        394      0  ALRT DSI064A OPENACB FAILED, ACBOFLG = X'68', ACBERROR = X
-        317      0  ALRT IEF196I EW1023I ESTABLISHING REMOTE ELAN CONNECTION,
-        234      0  ALRT DFS826I  TSTDBDV2 .NOFND  X17H
-        231      0  ALRT FT197I  WAITING FOR MAINVIEW FOR CICS SUBTASKS TO END
-                               OL
-        217      0  ALRT IST663I  CDINIT      REQUEST FROM VTAME      FAILED  , S
-        191      0  ALRT IST889I  SID = CD9F01E6DCE4BF00
-        186      0  ALRT IST664I  REAL  OLU=USBOOL01.EXTSTN      ALIAS DLU=USBO
-        152     152  MSG  DFS826I  151 DBD ERRORS SENT TO JOB LOG  X17H
-        119      0  ALRT ICH408I  USER(BMVJJC1 ) GROUP(MVSSUP  ) NAME(CHAO JUNG
-        101      0  ALRT IEA989I  SLIP TRAP ID=X33E MATCHED
-         82      0  ALRT EAO002I  09.31.55 CCIS HEARTBEAT

```

You might find that only 1 or 2 events make up 50% of your event traffic. By creating Rules for these events, you could automate as much as 50% of the events.

Using Line Commands: Selecting an Event

Once you have decided on an event to automate, issue the **S** line command (for (S)elect) in the **LC** column.

The Rule Processor Detail Control panel is displayed. The Rule that you create will be added to the Rule Set named in the **Rule Set to be Updated ==>** field of the Event Activity Statistics application. Proceed to “Creating Rules for Events: Using the Rule Processor Detail Control Panel” on page 5-1 for more information about creating a Rule.

Using Primary Commands

Table 4-2 on page 4-9 describes the primary commands for the **COMMAND** line of the Event Activity Statistics panel.

Table 4-2 Event Activity Statistics Panel Primary Commands (Part 1 of 2)

Command	Parameters	Description
FIND F	text-id	<p>Finds an exact match of a specified text-ID.</p> <p>Use this command when you are searching for a specific text-ID; for example:</p> <p>F \$HASP00</p> <p>This command can be repeated with the RFIND command.</p>
LOCATE L	text-id or partial text-ID	<p>Locates the closest match to a specific text-ID.</p> <p>Use this command when you are searching for occurrences of text-IDs and you want to use a text string to perform the search; for example:</p> <p>L \$HASP</p> <p>This command cannot be repeated with the RFIND command.</p>
RFIND	n/a	Repeats the previous FIND command and searches for the same text-ID.
SHOWALL SA	n/a	Shows all messages; use this command to redisplay all messages after a SM, SP, or ST command that has been entered previously.
SHOWMESSAG E SM	text-id or text string	<p>Displays only those messages that match a specific text-ID or text pattern; for example:</p> <p>SM \$HASP</p> <p>lists only those messages that begin with a message ID of \$HASP.</p> <p>To return the display to its initial state, issue the SHOWALL SA command.</p>
SHOWPER SP	nn	<p>Displays entries (sorted by occurrence) whose combined counts constitutes a given percentage (nn) of the total message traffic. The value nn is equal to the percentage. For example:</p> <p>SP 80</p> <p>displays those messages that make up 80% of the total message traffic.</p> <p>To return the display to its initial state, issue the SHOWALL SA command.</p>

Table 4-2 Event Activity Statistics Panel Primary Commands (Part 2 of 2)

Command	Parameters	Description
SHOWTOP ST	nn	<p>Applies the percentage (nn) to the total message traffic to calculate a minimum count. All entries whose count exceeds the calculated minimum count are displayed. For example:</p> <p>ST 30</p> <p>displays all messages that occurred more frequently than 30% of the total message traffic.</p> <p>To return the display to its initial state, issue the SHOWALL SA command.</p>
SORT	[COUNT HANDLED Type Text-ID] A D	<p>Sorts the display, by column heading, in ascending or descending order. Descending order (the default) means the largest value is shown at the top of the display. For example:</p> <p>SORT COUNT</p> <p>sorts all messages by the number of times they have been encountered in descending order. The event encountered most often is shown at the top.</p> <p>You can sort on all of the column headings <i>except</i> on the column heading <i>Description</i>.</p>

Describing Fields

The input fields under the **Type** and **Text-ID/Description** column headings can be used to qualify the display of events and show only certain event types or events with certain text-IDs. Refer to “How to Qualify Displays in the Rule Processor Applications” on page 3-12 for more information.

Table 4-3 contains descriptions of the fields on this panel.

Table 4-3 Event Activity Statistics Application Field Descriptions (Part 1 of 3)

Field	Description
Activated at	<p>is the date and time of either</p> <ul style="list-style-type: none"> last cold start of the MAINVIEW AutoOPERATOR subsystem last time the BBI command .RESET STATS was entered
Total Events	<p>is the total number of events collected since</p> <ul style="list-style-type: none"> last cold start of the MAINVIEW AutoOPERATOR subsystem last time the command .RESET STATS was entered

Table 4-3 Event Activity Statistics Application Field Descriptions (Part 2 of 3)

Field	Description
Rule Set to be Updated	<p>is the name of the enabled Rule Set to which a Rule is added if you select an event from the display to be automated with a Rule (using the Select S line command)</p> <p>The default Rule Set name is AAORUL00. You also can enter a new Rule Set name in this field.</p>
Sort Criterion	<p>is the column title by which this display is sorted</p> <p>Valid values are COUNT, HANDLED, Text-ID, and NONE. NONE displays the events in the order in which they first occurred.</p>
LC	<p>is the field in which you can enter the line command Select S</p> <p>When you enter an S and press Enter to select an event, the Rule Processor Detail Control panel is displayed and you can begin to create a Rule for the event with this panel.</p>
Count	<p>is the number of times that this event occurred since</p> <ul style="list-style-type: none"> last cold start of the MAINVIEW AutoOPERATOR subsystem last time the command .RESET STATS was entered
Handled	is the number of times a Rule was fired to handle the event
Type	<p>is the event origin; possible values for the Event Activity Statistics application are as follows:</p> <p>ALRM, ALRT, CICS, CMD, DB2, EXT, IMS, JES3, JRNL, MSG, MQS</p>
Text-ID/ Description	<p>is a field containing the Text-ID and Description of the event</p> <p>The maximum length of the text-ID is 16 characters and the Text-ID is highlighted so that it stands out from the remainder of the message text.</p> <p>Only the first 100 characters of the message are displayed. Scrolling left and right affects only the description portion of this field.</p> <p>To scroll this display, use the LEFT or RIGHT commands from the command line or use the assigned PF keys.</p>

Table 4-3 Event Activity Statistics Application Field Descriptions (Part 3 of 3)

Field	Description
UNIQUE	<p>is the number of unique events collected by the Event Activity Statistics application since the last BBI-SS PAS cold start or the last time the BBI command .RESET STATS was entered</p> <p>An event is considered unique by WORD1 of the event's text.</p> <p>New events are added to the statistics table in the order they occur after an MAINVIEW AutoOPERATOR cold start or the last time the .RESET STATS command was entered.</p> <p>The default maximum value is 510. When the maximum (510) is reached, new text-IDs are no longer added to the table but the count for events already in the table continues to be updated.</p> <p>Because the Event Activity Statistics collects many event types, you might want to increase the MCTSIZE. To change the default maximum, change the MCTSIZE parameter in BBISSP00 (see the <i>MAINVIEW Common Customization Guide</i> for more information).</p>
<p>Note: Events that do not show up on this panel are still eligible for automation but you must write Rules for them using the Display/Modify Rules and Rule Sets option (refer to Chapter 9, "Managing Rules and Automation Using the Automation Control Panel").</p>	

Describing Special Event Types: DB2, EXT, TIME, and VAR

This section describes the following special event types:

- DB2
- EXT
- TIME
- VAR

DB2 Events

DB2 messages originate from the MAINVIEW for DB2 product and these messages are sent to the MVS console as Write-to-Operator messages (WTOs). Normally, you need the MAINVIEW AutoOPERATOR for OS/390 option for the Rule Processor to capture MVS traffic and automate events from it.

However, by supporting the DB2 event type, the Rule Processor allows customers who own MAINVIEW for DB2 but do not own the MAINVIEW AutoOPERATOR for OS/390 option to access the MVS DB2 messages. Therefore, DB2 messages are events supported by the Rule Processor with their own event type of DB2 rather than the MSG event type.

Customers who own MAINVIEW AutoOPERATOR for OS/390 have access to DB2 messages as both event types. For simplicity, these customers should automate DB2 by using the MSG event type.

If you do not have the MAINVIEW AutoOPERATOR for OS/390 option, you must define the DB2 target in BBPARM member BBJNT00. In addition, you must specify **PRODUCT=DMR** in BBPARM member BBISSP00 and **LOG=YES** in BBPARM member DMRBEX00. For more information about these BBPARM members and parameters, refer to the *MAINVIEW Common Customization Guide*.

EXT Events

The event type EXT (external) is used to capture externally generated messages.

An external message is a message directed at the BBI-SS PAS using SUBSYS= parameter on a DD statement in JCL.

To make EXT events available to the Rule Processor, you must code

```
SUBSYS=xxxx
```

where *xxxx* is the MAINVIEW AutoOPERATOR subsystem ID (SSID) on the DD statement to which the messages you want to capture are written. You can have only one SUBSYS=xxxx parameter specification per job step.

The MAINVIEW AutoOPERATOR subsystem must have been started at least once since the last IPL or the job containing this DD will get a JCL error. The MAINVIEW AutoOPERATOR subsystem does not have to actually be active at the time the external job is submitted.

Each line written to the DD will be treated as a separate event in the Rule Processor. The messages can be captured using the EXT event type.

TIME Events

Where most Rules are triggered to fire based on a system message or command, you can create Rules that are triggered to fire on **time**. These events never appear in the Event Activity Statistics application.

For example, you can specify that a Rule fires

- at 10:00 A.M. every weekday
- every Wednesday from 1:00 P.M. to 3:00 P.M. at 5-minute intervals
- at BBI-SS PAS startup
- at 1:00 P.M. and fires every 10 minutes until 2:00 P.M.

All these Rules are TIME-initiated Rules and have an event type of TIME.

A Rule must be enabled at least 121 seconds (two minutes and one second) before the next start interval that it is scheduled to be fired. If the rule is not enabled, the following interval is used as the start time.

For example, suppose a Rule specifies a start time of 10:00:00 with an interval of one hour. If it is enabled at 10:58:01, it will fire for the first time at 12:00:00. If it is enabled at 10:57:59, it will fire for the first time at 11:00:00.

Refer to “Creating TIME-Initiated Rules” on page 7-20 for an example of creating a TIME-initiated Rule.

VAR Events

The VAR event is an event where a variable in the SHARED pool is created, deleted, or its value was changed. You can create Rules that are triggered to fire based on this event. These events never appear in the Event Activity Statistics application.

Chapter 5 **Creating Rules for Events: Using the Rule Processor Detail Control Panel**

There are two ways to select an event for Rule creation: one is to select events from the MAINVIEW AutoOPERATOR Event Activity Statistics application (Option 1 from the Automation Menu). The other is to research and prepare a list of events and select Option 2, Display/Modify Rules and Rule Sets and begin creating Rules from the Automation Control panel.

Once you are ready to begin creating Rules, you will begin from the Rule Processor Detail Control panel. The following sections describe the Rule Processor Detail Control panel and the role it plays during Rule creation.

What the Rule Processor Detail Control Panel Is

The Rule Processor Detail Control panel plays a central role in Rule creation; on this panel you enter important information such as

- Rule ID of the Rule
- event type
- initial mode of the Rule when MAINVIEW AutoOPERATOR starts
- whether the Rule is controlled from over-firing when events flood the system
- Rule documentation information

Also, five additional panels used for Rule creation are accessed through the Rule Processor Detail Control panel and they are (by default) displayed in this order:

1. Selection Criteria
2. Variable Dependencies
3. Action Specification
4. Alert Action(s) I
5. Alert Action(s) II

The Rule Processor Detail Control panel is redisplayed.

“Overview of Panels Required to Create a Rule” on page 5-3 shows the sequence of panels used to create a Rule.

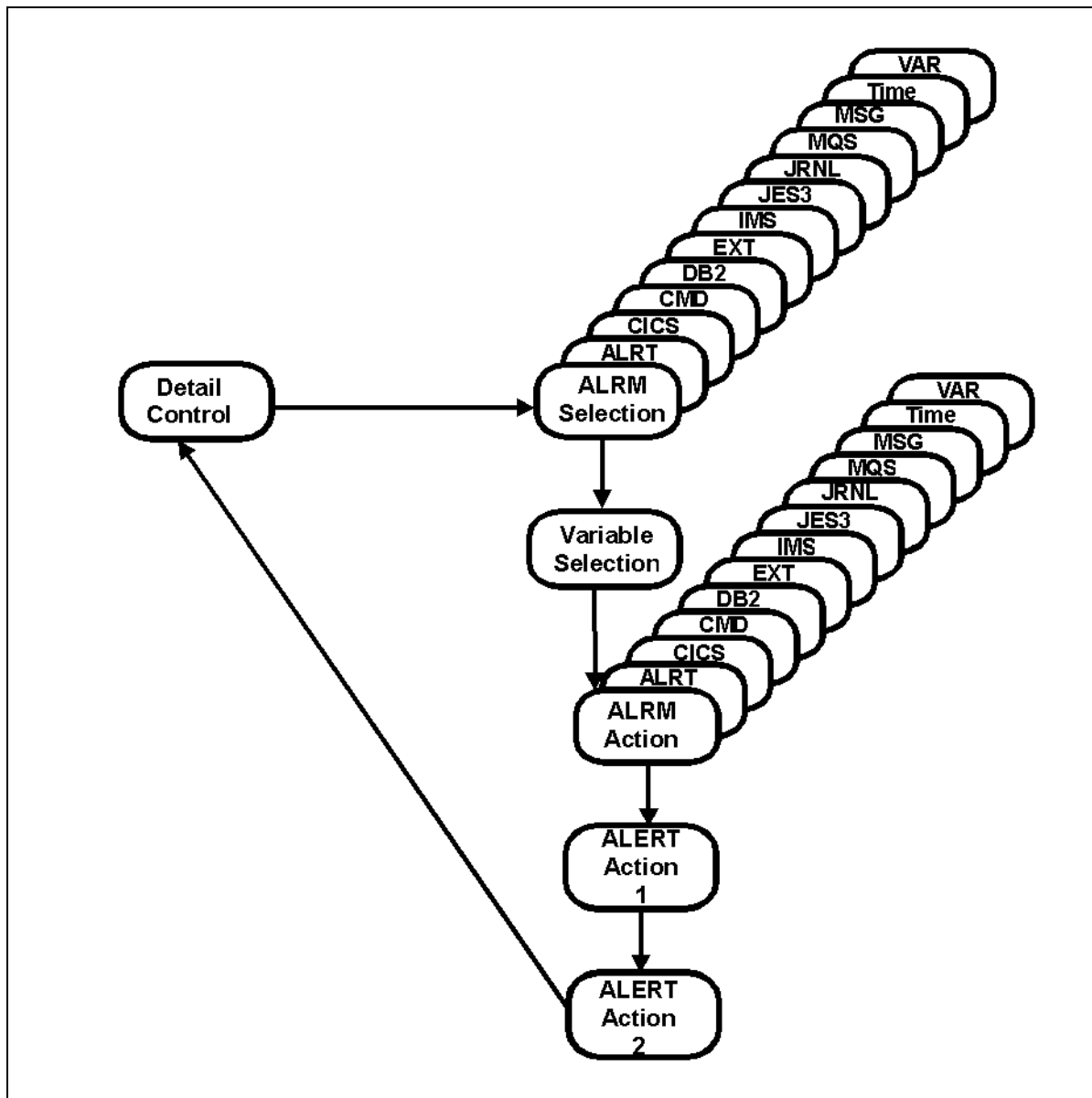
This chapter contains the following sections:

- How to access the Rule Processor Detail Control panel, page 5-4 through page 5-11
- How to fill in Rule-related information, page 5-13 through page 5-18
- Using the Criteria Match Rate Fields, page 5-18
- How to save a Rule, page 5-21

“Example 1: Creating a Suppression Rule” on page 7-2 describes the subsequent five panels accessed from the Rule Processor Detail Control panel that is used in Rule creation.

Figure 5-1 on page 5-3 shows the sequence of panels used to create a Rule.

Figure 5-1 Overview of Panels Required to Create a Rule



Accessing the Rule Processor Detail Control Panel

You can access the Rule Processor Detail Control panel in one of two ways:

- from the Event Activity Statistics application when you select an event on the display to be automated by a Rule
- from the Automation Menu

The following procedure describes how to access the Rule Processor Detail Control panel from either application.

Step 1 To access the Rule Processor Detail Control panel from the Event Activity Statistics panel, enter **S** (for the (S)elect line command) in the **LC** field next to the event that you want to write a Rule for. See Figure 5-2.

Figure 5-2 Selecting an Event

BMC Software ----- Event Activity Statistics ----- MAINVIEW AutoOPERATOR									
COMMAND ==>									
Activated at: 14-FEB-01 14:15:53 Total Events: 19,095 DATE --- 01/02/14									
Rule Set to be Updated ==> AAORUL00 Sort Criterion: NONE TIME --- 17:23:12									
Line CMDS - (S)elect									
LC	Count	Handled	Type	Text-ID/Description				Unique-	510
-	54	0	ALRT	IST264I	REQUIRED RESOURCE				CXTSTN NOT ACTIVE
-	5	4	JRNL	IM9100I	COMMAND ACCEPTED				
-	943	0	ALRT	DSI064A	OPENACB FAILED, ACBOFLG = X'68', ACBERROR = X				
-	90	0	ALRT	HAO002I	CCIS HEARTBEAT				
-	4	4	JRNL	IM9102I	BBI VERSION 260 STARTED ON 14-FEB-96 AT 14:1				
-	2	0	ALRT	EAO004C	17.04.24 CCIS HEARTBEAT INTERVAL = 60				
-	4	4	JRNL	IM9107I	USERS DEFINED - 020, ACTIVE - 000				
-	4	4	JRNL	IM9160I	REJECTING VTAM TS LOGONS				
S	340	0	ALRT	EAO002I	17.04.09 CCIS HEARTBEAT				
-	4	0	JRNL	IM9327I	AUTOMATIC RESTART MANAGER REGISTRATION IS IN				
-	4	4	JRNL	AA0103I	IAO - ACTIVE				
-	4	4	JRNL	AA0104I	MAO - ACTIVE				
-	517	0	ALRT	IST314I	END				
-	4	0	JRNL	CF0200I	CMRLOAD NOT ACTIVE				
-	90	0	ALRT	BBCSJ016W	R0=00000010, R15=00000004, FDBK=100000, FDB				
-	2	0	ALRT	HAO000I	CCIS COMMAND RECEIVED OK				

The Rule Processor Detail Control panel is displayed (Figure 5-3 on page 5-5).

Figure 5-3 Rule Processor Detail Control Panel

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
                                                    TGT --- AO41
                                                    TIME --- 17:25:41
                                                    DATE --- 01/02/14

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria                A1 - Action Specification
    SV - Variable Dependencies            AA - Alert Actions(s) I
                                         AD - Alert Actions(s) II

Rule ID      ==> EAO002I
Event Type   ==> ALRT      Type of event ( ? for list)
Initial Mode ==> ENABLED   (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>           (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>           (Interval length, 1-99999 seconds)
then status  ==>           (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==>           Function      ==>           Code      ==>
Author       ==> BAOMXY2   Description   ==>
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 2 To access the Rule Processor Detail Control panel from the Automation Menu:

2.A Select Option 2, Display/Modify Rules and Rule Sets from the Automation Menu. See Figure 5-4 on page 5-6.

Figure 5-4 Selecting Option 2, Display/Modify Rules and Rule Sets

```
BMC Software ----- AUTOMATION MENU ----- AutoOPERATOR
OPTION ===>                                     DATE  -- 2003/10/09
                                                TIME   -- 17:48:18

Basic Automation:
  1  Event Activity Statistics
  2  Display/Modify Rules and Rule Sets
  3  Continuous State Manager - Global Overview
  4  Total Object Manager

Advanced Automation:
  6  Shared Object Facility
  7  Display/Modify EXEC Status
  8  Time-Initiated EXEC Requests
  9  Open Systems Procedural Interface (OSPI)

                                           PF1/13  HELP  PF3/15: EXIT

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```

The Automation Control panel is displayed (Figure 5-5 on page 5-7).

Figure 5-5 Automation Control Panel

```

BMC Software ----- Automation Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
Primary commands: Add, Statshow, Cmdshow
TGT ==> AO63
DATE --- 01/02/14
TIME --- 17:48:38

Automation Status ==> ACTIVE (Active, Inactive)
Automation Strategy ==> INDIVIDUAL (Individual, All, First)
Honor MPF Suppression ==> NO (NO/YES)

Automation Statistics
Total Events 23,655 Display suppressed 88
Events Handled 5,367 Hardcopy suppressed 0
Current arrival rate 1 / sec Rule generated Alerts 5,140
Peak arrival rate 56 / sec Rule invoked Execs 246

Automation Library
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (SA)ve
(M)ove, (B)efore or (A)fter, (F)ilter Criteria
LC Rule-Set Status Rules Fired Filtered Date Time Strategy
___ AAORUL00 ENABLED 14 5,140 23,655 14-FEB-01 14:15:54 FIRST
___ AAORULBC ENABLED 54 232 23,655 14-FEB-01 14:15:55 FIRST
___ AAORULCM ENABLED 52 124 23,655 14-FEB-01 14:15:55 FIRST
___ RULCICS ENABLED 25 0 23,655 14-FEB-01 14:15:57 FIRST
___ AAORULBA DISABLED N/A N/A N/A N/A N/A
___ AAORULBB DISABLED N/A N/A N/A N/A N/A
___ AAORULBF DISABLED N/A N/A N/A N/A N/A
___ AAORULBS DISABLED N/A N/A N/A N/A N/A
___ AAORULCS DISABLED N/A N/A N/A N/A N/A
___ AAORULC1 DISABLED N/A N/A N/A N/A N/A
___ AAORULD1 DISABLED N/A N/A N/A N/A N/A
___ AAORULD2 DISABLED N/A N/A N/A N/A N/A

```

2.B Select a Rule Set by entering **S** (for the **(S)elect** line command) next to the Rule Set name. See Figure 5-6 on page 5-8.

Figure 5-6 Automation Control Panel: Creating a New Rule

```

BMC Software ----- Automation Control ----- MAINVIEW AutoOPERATOR
COMMAND ==> TGT ==> AO63
Primary commands: Add, Statshow, Cmdshow DATE --- 01/02/14
TIME --- 17:48:38

Automation Status ==> ACTIVE (Active, Inactive)
Automation Strategy ==> INDIVIDUAL (Individual, All, First)
Honor MPF Suppression ==> NO (NO/YES)

Automation Statistics
Total Events 23,655 Display suppressed 88
Events Handled 5,367 Hardcopy suppressed 0
Current arrival rate 1 / sec Rule generated Alerts 5,140
Peak arrival rate 56 / sec Rule invoked Execs 246

Automation Library
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (SA)ve
(M)ove, (B)efore or (A)fter, (F)ilter Criteria
LC Rule-Set Status Rules Fired Filtered Date Time Strategy
S AAORUL00 ENABLED 14 5,140 23,655 14-FEB-01 14:15:54 FIRST
___ AAORULBC ENABLED 54 232 23,655 14-FEB-01 14:15:55 FIRST
___ AAORULCM ENABLED 52 124 23,655 14-FEB-01 14:15:55 FIRST
___ RULCICS ENABLED 25 0 23,655 14-FEB-01 14:15:57 FIRST
___ AAORULBA DISABLED N/A N/A N/A N/A N/A
___ AAORULBB DISABLED N/A N/A N/A N/A N/A
___ AAORULBF DISABLED N/A N/A N/A N/A N/A
___ AAORULBS DISABLED N/A N/A N/A N/A N/A
___ AAORULCS DISABLED N/A N/A N/A N/A N/A
___ AAORULC1 DISABLED N/A N/A N/A N/A N/A
___ AAORULD1 DISABLED N/A N/A N/A N/A N/A
___ AAORULD2 DISABLED N/A N/A N/A N/A N/A

```

2.C Or, add a new Rule Set with the ADD primary command on the **COMMAND** line. See Figure 5-7 on page 5-9.

Figure 5-7 Adding a New Rule Set

```

BMC Software ----- Automation Control ----- MAINVIEW AutoOPERATOR
COMMAND ==> ADD RULALRT                                TGT ==> A063
Primary commands: Add, Statshow, Cmdshow                DATE --- 01/02/14
                                                    TIME --- 17:48:38

Automation Status    ==> ACTIVE          (Active, Inactive)
Automation Strategy  ==> INDIVIDUAL      (Individual, All, First)
Honor MPF Suppression ==> NO             (NO/YES)

                        Automation Statistics
Total Events          23,655  Display suppressed          88
Events Handled        5,367  Hardcopy suppressed          0
Current arrival rate   1 / sec  Rule generated Alerts      5,140
Peak arrival rate     56 / sec  Rule invoked Execs         246

                        Automation Library
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (SA)ve
              (M)ove, (B)efore or (A)fter, (F)ilter Criteria
LC  Rule-Set Status  Rules  Fired  Filtered  Date      Time      Strategy
___ AAORUL00 ENABLED   14    5,140   23,655  14-FEB-01 14:15:54 FIRST
___ AAORULBC ENABLED   54     232   23,655  14-FEB-01 14:15:55 FIRST
___ AAORULCM ENABLED   52     124   23,655  14-FEB-01 14:15:55 FIRST
___ RULCICS ENABLED    25      0   23,655  14-FEB-01 14:15:57 FIRST
___ AAORULBA DISABLED  N/A   N/A     N/A      N/A      N/A
___ AAORULBB DISABLED  N/A   N/A     N/A      N/A      N/A
___ AAORULBF DISABLED  N/A   N/A     N/A      N/A      N/A
___ AAORULBS DISABLED  N/A   N/A     N/A      N/A      N/A
___ AAORULCS DISABLED  N/A   N/A     N/A      N/A      N/A
___ AAORULC1 DISABLED  N/A   N/A     N/A      N/A      N/A
___ AAORULD1 DISABLED  N/A   N/A     N/A      N/A      N/A
___ AAORULD2 DISABLED  N/A   N/A     N/A      N/A      N/A

```

2.D A new Rule Set named RULALRT is added; select the RULALRT Rule Set with the S (for (S)elect) line command to add Rules.

The Rule Processor Detail Control panel is displayed; see Figure 5-8 on page 5-10.

Figure 5-8 Rule Processor Detail Control Panel

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
                                TGT --- AO41
                                TIME --- 17:25:41
                                DATE --- 01/02/14

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria          A1 - Action Specification
    SV - Variable Dependencies      AA - Alert Actions(s) I
                                    AD - Alert Actions(s) II

Rule ID      ==> EAO002I
Event Type   ==> ALRT      Type of event ( ? for list)
Initial Mode ==> ENABLED   (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>          (Interval length, 1-99999 seconds)
then status  ==>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==>          Function      ==>          Code      ==>
Author       ==> BAOMXY2  Description   ==>
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 3 Use the Rule Processor Detail Control panel to specify the following information:

- **The unique Rule ID for the Rule**

You should establish a guideline for assigning Rule IDs to Rules. For example, you may want to develop a naming scheme where the Rule ID is associated with a specific group of people or functions.

If you do not assign a Rule ID to a Rule, MAINVIEW AutoOPERATOR automatically assigns a Rule ID in the form RULnnnnn, where nnnnn is a number from 1 to 99999. The format RULnnnnn is reserved for MAINVIEW AutoOPERATOR use only and cannot be used as a user-specified Rule ID.

When you select an event for automation from the Event Activity Statistics application, the **Rule ID** and the **Event Type** fields are automatically filled in with data from the **Text ID** and **Type** fields in the Event Activity Statistics application. The first eight characters of the selected event's Text-ID are used as the Rule ID.

For more information about the Event Activity Statistics, refer to "Identifying Events for Automation with Rules: Using the Event Activity Statistics Application" on page 4-5.

- **The event type that you are writing a Rule for**

You must specify an event type because the event type determines which primary Selection Criteria and Actions Specification panels are displayed as you create or edit a Rule.

For example, if you are creating a Rule for a CICS event, you will receive a different Selection Criteria and Action Specification panel than if you are creating a Rule for an IMS event.

Step 4 To see a list of possible types, enter a question mark (?) in the **Event Type** field.

Figure 5-9 Rule Processor Detail Control Panel: Displaying Available Event Types

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
                                                    TGT --- AO41
                                                    TIME --- 17:25:41
                                                    DATE --- 01/02/14

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria                A1 - Action Specification
    SV - Variable Dependencies            AA - Alert Actions(s) I
                                         AD - Alert Actions(s) II

Rule ID      ==> EA0002I
Event Type   ==> ?      Type of event ( ? for list)
Initial Mode ==> ENABLED (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>          (Interval length, 1-99999 seconds)
then status  ==>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==>          Function      ==>          Code   ==>
Author       ==> BAOMXY2 Description   ==>
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

The following Rule Processor Event Types panel is displayed.

Figure 5-10 Rule Processor Event Types Panel

```

BMC Software ----- Rule Processor Event Types ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                           TGT --- AO41

MVS Events: (MAO Option Required)    IMS Events: (IAO Option Required)
C CMD - Operator commands.          I IMS - IMS MTO messages.
L ALRM - Alarm Manager events.
M MSG - WTO or WTOR message.        CICS Events: (CAO Option Required)
3 JES3 - JES3 events                Q CICS - Messages from TD Queue.

DB2 Event: (MAO Option Required)     MQSeries Event: (QAO Option Required)
D DB2 - DB2 msgs (WTOS).             S MQS - MQSeries instrumentation events
                                     and messages

AO Events: (Common to all options)
A ALRT - Alerts being added to Queue.
J JRNL - BBI Journal messages.
T TIME - Time-initiated Rule.
V VAR - Event-Type(Var).
X EXT - External msgs directed to BBI SS.

```

This panel shows the three- or four-character event type name for all the event types supported by the Rule Processor. You can also use a one-character event type abbreviation in the **Event Type** field.

For more information about event types, refer to Chapter 4, “Describing Events.”

Step 5 Once the Rule ID and the event type are filled in, press **Enter** to proceed to the next panel and continue creating the Rule.

“Example 1: Creating a Suppression Rule” on page 7-2 contains information about using the five other Rule creation panels.

For more information about the other fields on the Rule Processor Detail Control panel that can be filled in at the beginning or end of Rule creation, refer to “Describing the Rule Processor Detail Control Panel” on page 5-13.

Describing the Rule Processor Detail Control Panel

You can fill in the following fields before you proceed to the other panels or after you have completed the other panels:

- Initial Mode Rule

When a Rule Set is enabled, this setting determines whether individual Rules within that Rule Set are ENABLED, DISABLED, or in TEST mode:

- If a Rule is ENABLED when the Rule Set is enabled, the Rule is ready to perform automation.
- If a Rule is DISABLED, the Rule will not perform any automation.
- If a Rule is in TEST mode, the Rule will fire but no actions are taken.

Using TEST mode is helpful when you want to see that you have set the correct selection criteria to cause the Rule to fire. Note that if the Rule has an EXEC associated with it, the EXEC is scheduled and variable IMFRLSTA is set to TEST.

- Criteria to change the status of a Rule to SUSPEND, DISABLE, or NOACTION is based on the volume of qualifying events within the specified time interval.

Possible uses of this criteria include

- disable a Rule when its firing rate exceeds the set threshold, possibly allowing a subsequent Rule to then fire
- prevent subsequent duplicate or unproductive actions from being scheduled
- prevent MAINVIEW AutoOPERATOR from being flooded with excessive actions when an unexpectedly large volume of events occur

When the **If matched** count is exceeded within the interval of time specified by **in seconds**, the Rule status is changed to the **then status** value.

Specifying a **then status** of **Disable** will disable the Rule. You can manually enable this Rule. Disabled Rules are ignored by the Rules processor.

Specifying a **then status** of SUSPEND temporarily disables the Rule. MAINVIEW AutoOPERATOR enables the Rule once the arrival rate of qualifying events falls below your specified threshold. Disabled Rules are ignored by the Rules processor.

Specifying a **then status** of NOACTION disables all actions for this Rule. In this case, no actions are issued, which means EXECs will not be scheduled, ALERT actions will not occur, and so on. However this Rule is considered to have fired. Therefore, if the strategy is set to FIRST, subsequent Rules in this Rule Set will not be inspected.

Refer to “Using the Criteria Match Rate Fields” on page 5-18 for more information about using the match rate.

- Application information

This information provides data for the Rule Set Overview panel that you will use to view and manage the Rules within a specific Rule Set. For this reason, it is important for you to complete these fields, especially if you have many users adding and using Rules within a single Rule Set.

Using Primary Commands

You can enter the primary commands shown in Table 5-1 on the **COMMAND** line of the Rule Processor Detail Control panel (or any of the panels used in Rule creation) as a shortcut to a specific panel. The table shows the command, the panel displayed, and provides a brief description.

Table 5-1 Using Primary Commands in the Rule Processor (Part 1 of 2)

Command	Displays	Description
blank (Default)	Selection Criteria panel when you press Enter	When you do not specify primary command, pressing Enter displays the Selection Criteria panel for the event type you specify in the Event Type field. By not using the primary commands in this table and only pressing Enter you progress through the six Rule creation panels.
S1	Selection Criteria - <i>event type</i> panel	Use this panel to specify attributes of an event that a Rule must match before the Rule is fired. You must specify at least one criterion.
SV	Variable Dependencies - <i>event type</i> panel	Use this panel to set the values of variables when you want to use variables for any of your selection criteria. Use of this panel is optional.
A1	Action Specification - <i>event type</i> panel	When the selection criteria of a Rule matches an event and the Rule is fired, the actions specified on this panel are taken by the Rule.

Table 5-1 Using Primary Commands in the Rule Processor (Part 2 of 2)

Command	Displays	Description
AA	Alert Action(s) I - <i>event type</i> panel	Only some of the Rules that you create will have ALERTs associated with them. For those Rules, you can use this panel to add or delete the ALERT to be issued as a result of the Rule being fired.
AD	Alert Action(s) II - <i>event type</i> panel	This panel is a continuation of the Alert Action(s) I panel and includes additional fields that you can use while creating an MAINVIEW AutoOPERATOR ALERT from a Rule.

Describing Fields

Figure 5-11 and Table 5-2 describe the fields on the Rule Processor Detail Control panel.

Top Portion of the Panel

The following section describes the fields in the top portion of the panel.

Figure 5-11 Top Portion: Rule Processor Detail Control Panel

```

Rule ID      ==> IMSJRNL
Event Type   ==>          Type of event ( ? for list)
Initial Mode ==> ENABLED (ENABLED/DISABLED/TEST)

```

Table 5-2 Rule Processor Detail Control Panel Field Descriptions: Top Portion (Part 1 of 2)

Field	Description
Rule ID	<p>one - to eight-character unique name of the Rule</p> <p>When you assign a Rule ID, you must remember to make it unique from previously created Rules because a duplicate Rule ID will override the original Rule.</p> <p>Valid characters that can be used in the Rule ID are letters A through Z, numbers 0 through 9, the pound sign (#), the at sign (@), and the dollar sign (\$).</p> <p>If this field is left blank, the Rule Processor assigns a Rule ID in the format RULxxxxx, where xxxxx is a number from 0 to 99999. Therefore, when you assign a Rule ID, you should avoid the naming convention RULxxxxx.</p> <p>In addition, if you issue a BBI.RESET RULESET or .SET RULESET= command, the Rule Processor assigns new Rule IDs to the Rules that do not have user-defined Rule IDs. To prevent reassignment of a Rule ID, assign an ID when you create a new Rule.</p>

Table 5-2 Rule Processor Detail Control Panel Field Descriptions: Top Portion (Part 2 of 2)

Field	Description
Event Type	<p>event type that describes the source of the message</p> <p>“Describing Events” on page 4-1 describes all the possible event types that the Rule Processor processes. You also can enter a question mark in the Event Type field and a list of the possible event types is displayed.</p> <p>You must enter an event type before you can proceed to the subsequent Rule creation panels.</p>
Initial Mode	<p>initial mode of the Rule when its Rule Set is enabled</p> <p>All Rules reside in Rule Sets which can be enabled (available to process events) or disabled (not available). When the Rule Set is enabled, you can specify the initial mode of individual Rules in this field; possible modes are as follows:</p> <ul style="list-style-type: none"> • ENABLED means that the Rule is available to process events. • DISABLED means that the Rule is not available to process events. • TEST means that the Rule will be fired in test mode. <p>When a Rule fires in TEST mode, no actions of the Rule are taken, but if an EXEC is associated with the Rule, the EXEC is scheduled and the variable IMFRLSTA is set to TEST.</p> <p>Once the Rule Set is enabled, you can change the mode of an individual Rule on the Rule Set Overview panel.</p>

Criteria Match Rate Threshold

The following table describes the fields in the middle portion of the panel called **Criteria match rate threshold**. For more information about using these fields, refer to “Using the Criteria Match Rate Fields” on page 5-18.

Figure 5-12 Middle Portion: Rule Processor Detail Control Panel

```
Criteria match rate threshold:
If matched      ==>      (Maximum # times matched within INTERVAL, 0-100)
in seconds      ==>      (Interval length, 1-99999 seconds)
then status     ==>      (SUSPEND, DISABLE, NOACTION)
```


Table 5-3 Rule Processor Detail Control Panel Field Descriptions: Middle Portion

Field	Description
If matched	<p>Specifies the number of times a Rule may be matched to an event within a certain interval of time. This value is also called match count target.</p> <p>Possible values range is 0 to 100 times.</p> <p>This value is used in conjunction with the <code>in seconds</code> and <code>then status</code> fields to define what event rate is used to prevent the Rule from matching too often.</p> <p>If value is 0, the Rule Set Criteria Match Rate is ignored.</p> <p>The Rule Set match rate is reset only when the Rule is updated or if the BBI-SS PAS is cold started.</p> <p>Refer to “Using the Criteria Match Rate Fields” on page 5-18 for more information.</p>
in seconds	<p>Is the interval of time, set <code>in seconds</code>, over which the match count will be collected for an event.</p> <p>Possible intervals range is 1 to 99999 seconds.</p> <p>When a Rule is matched by the number of times set in the <code>If matched</code> field and within the time interval set in the <code>in seconds</code> field, the action specified in the <code>then status</code> field is taken.</p> <p>Refer to “Using the Criteria Match Rate Fields” on page 5-18 for more information.</p>
then status	<p>Specifies whether a Rule should be suspended or disabled when the number of times it is matched reaches the match count target within a specific time interval. Possible values are as follows:</p> <p>SUSPEND Suspends the Rule.</p> <p>Event matches to the Rule are ignored until the actual match count drops below the match count target and the Rule ceases to fire. When the match rate falls below the threshold, the Rule will begin to fire again.</p> <p>DISABLE Disables the Rule.</p> <p>Event matches to Rule are ignored when the actual match count exceeds the specified match count target, and the Rule is disabled. You must manually re-enable the Rule. Refer to “Using the Criteria Match Rate Fields” on page 5-18 for more information.</p> <p>NOACTION Takes no action.</p> <p>When the match count for a Rule exceeds its match rate, the Rule is set for no action. The Rule will match and the fired count will increase, but no actions specified for that Rule will take place. The action is resumed when the match rate falls below the threshold.</p>

Application Information Fields

Table 5-4 describes the Application information portion of the panel.

Figure 5-13 Bottom Portion: Rule Processor Detail Control Pane

Application information:				
Group	==> IMS	Function	==> JOURNAL	Code ==> JN
Author	==> DDH1	Description	==> JOURNAL ALL IMS MESSAGES	
Last Modified by		on		at

These fields are used to document information about the Rule and this information appears on the Rule Set Overview panel. By filling in these fields, the Rule Set Overview panel will contain more complete information about each Rule.

Table 5-4 Rule Processor Detail Control Panel Field Descriptions: Bottom Portion

Field	Description
Group	user-defined 1- to 8-character group name assigned to this Rule
Function	user-defined 1- to 8-character function name assigned to this Rule
Code	user-defined 2-character code assigned to this Rule
Author	user-defined 1- to 8-character name of author of this Rule
Description	user-defined 1- to 25-character description of this Rule
Last Modified	Is a display-only field that shows the date and time when the Rule was last modified and the user ID of whomever changed the Rule

Using the Criteria Match Rate Fields

In addition to specifying thresholds for each Rule, you can specify a default threshold for each Rule within a Rule Set by using the Criteria Match Rate settings in the filter of the Rule Set (see “Managing Rules and Automation Using the Automation Control Panel” on page 9-1).

Specifying a Rule Set match rate affects only the Rules that do not have a threshold specified. The Rule Set Match Rate can be used to ensure that every Rule has a match rate specified, thus preventing looping Rules or flooding the PAS with automation.

Some Rules might have a normally high match rate, such as a Rule to suppress a message. Before changing the Rule Set default Match Rate Criteria, Rules should be reviewed. Rules designed to have a high Match Rate can be coded with **If matched ==> 0** to ignore the default Rule Set value.

For every Rule you create, you should determine an appropriate firing rate. For example, sometimes a single event generates a flood of events in a very short amount of time. In this case, you might want the Rule for that event to fire only once, based on the first time the event occurs. By using the fields **If matched**, **in seconds**, and **then status**, you can resolve this problem.

The **If matched** and **in seconds** fields define the threshold matching rate for a Rule. When the match count of a Rule matches the value you set within the specified time interval, the **then status** field determines the status of the Rule. You can specify the status to be SUSPEND, DISABLE or NOACTION.

If you specify that the Rule is suspended, the Rule is automatically re-enabled when the matching rate falls below the specified threshold. If you specify that the Rule is disabled, you must manually re-enable the Rule. If you specify to take no action, the Rule will match and the fired count will increase, but no actions specified for that Rule will take place. The action is resumed when the match rate falls below the threshold.

Note: The difference between NOACTION and SUSPEND is that if the Rule Set is using the strategy, FIRST, SUSPEND allows a subsequent Rule in the Rule Set to fire for this event whereas NOACTION will fire this Rule and suppress further checking in the Rule Set.

Example

This example shows that if a Rule matches an event 10 times within any 30 second interval, the Rule will be suspended.

```
Criteria match rate threshold:
If matched      ==> 10      (Maximum # times matched within INTERVAL,
0-100)
in seconds      ==> 30      (Interval length, 1-9999 seconds)
then status      ==> SUSPEND (SUSPEND, DISABLE, NOACTION)
```

Note: When the PAS is cold started, the Rules Status will be as coded in the Rule Set members. Any Rule status changes made as a result of the match rate specifications are discarded.

If a criteria match rate is specified in this Rule Set Filter, every Rule will have a criteria match rate, either an explicit match rate coded in the Rule or an implicit match rate inherited from the filter. With the Rule Set filter, you can limit the number of events and the types of events that are passed through a specific Rule Set. For more details about using Rule Set filtering with criteria match rate, see “Enabling Rule Set Filtering and Rule Set Match Rate” on page 9-14.

In order to bypass Rule Set criteria match rate checking, specify the criteria match rate fields for the Rule, which causes the Rule Set criteria match rate to be ignored. Only the criteria match rate for the Rule will apply.

Note: A value of 0 in the **If matched** field of the Rule Set Match Rate can also be used to ignore the Rule Set Match Rate. Rules that specify 0 will always fire.

Rules whose status has changed to SUSPEND, DISABLE, or NOACTION as a result of a high matching rate are enabled when manually enabled or when the subsystem is cold started. A new actual matching rate is calculated for the preceding interval every time the Rule matches an event.

These fields cannot be set for Time-initiated Rules.

Advanced Rule Processing Techniques

You can use the criteria match rate fields along with an Automation Strategy of FIRST for some advanced Rule Processing techniques. For example, as you create a Rule and specify a match rate to be met, you might want to create a second Rule to take some action when the first Rule is suspended or disabled.

In other words, you can use the criteria match rate fields with the FIRST Automation Strategy to develop a Rule that is disabled or suspended when the match rate is met *and* develop a second Rule to perform an appropriate automation task when the first Rule stops firing. Perhaps this second Rule will write a message to the Journal or perhaps it will send a message to a TSO user ID to notify an operator of the situation.

You can also use this technique to have a Rule fire every *n*th occurrence of an event. For example, you can create a Rule that does not perform any automation actions and specify that it is disabled or suspended when it matches an event 5 times within 30 minutes. Create a second a Rule for the same event and this time, have it take an automation action. You have, in effect, a Rule that fires and takes an automation action every 6th time the event occurs.

Activating and Saving Modified Rules

Saving a Rule occurs when the Rule Set to which the Rule belongs is explicitly saved and written to disk.

To save a new Rule or changes made to an existing Rule, you must

1. Press **PF3/END** from the Rule Processor Detail Control Panel

The Rule Set Overview panel is displayed and any changes you have made to the Selection Criteria, Variable Dependencies, Action Specification, or ALERT Action(s) panel are saved to the Rule Set.

2. Type the primary command **SAVE** on the **COMMAND** line of the Rule Set Overview panel.

Typing **SAVE** writes the displayed Rule Set to disk. If you do not save your changes to disk, your changes will be lost at the next subsystem cold start or if you issue the BBI command to reset Rule Sets.

If you press **PF3/END** from the Rule Set Overview panel *before* you **SAVE** the Rule Set, Figure 5-14 on page 5-21 is displayed.

Figure 5-14 Example of Confirm Rule Set Panel

```

BMC Software  ----- Confirm Rule Set Modifications ----- INVALID INPUT
COMMAND =====>                                     TGT --- BBSYSA

+-----+
+ WARNING! Changes made to Rule Set AAORUL02 have not been saved.  Those +
+ changes were one or more of the following: +
+
+ o A Rule was changed. +
+ o The status of a Rule was modified. +
+ o A Rule was added, deleted, inserted, or copied. +
+ o A Rule was moved. +
+ o The individual Rule Set strategy changed. +
+
+ Please do one of the following: +
+
+ - Enter SAVE to save AAORUL02 to the BBIPARM data set. +
+ - Enter NOSAVE to exit WITHOUT saving AAORUL02 to the BBIPARM data set. +
+ - Press END to return to Rule Set Overview. +
+-----+

```

If the BBI-SS PAS terminates while you are using the Rule Processor Detail Control panel, a short message `BBI-SS UNAVAILABLE` is displayed when you press **PF3**. If this situation occurs, enter the `CANCEL` command to exit the Rule Processor Detail Control panel. Any changes you might have made will be lost and you must make them again.

Chapter 6 **Creating Rules for Events: Using the Rule Creation Panels**

This chapter describes the panels accessed through the Rule Processor Detail Control panel that are used in Rule creation.

For every Rule you create, you will use a Selection Criteria panel and an Action Specification panel and for each event type, there are different versions of the Selection Criteria and Action Specification panels.

Optionally, you may use a second (additional) selection criteria panel called the Variable Dependencies panel or a second (additional) action specification panel called the Alert Action(s) panel. Certain event types use customized Alert Action(s) panels.

In other words, depending on what events you create a Rule for, different selection criteria items and different actions are displayed on the Selection Criteria panels, Action Specification panels, and ALERT Action(s) panels for that event type. Only the Variable Dependencies panel displays the same information for every event type.

For more information about Rules and events, refer to

- “Describing Events” on page 4-1 for a description of the event types that the Rule Processor supports
- “Creating Rules: Examples” on page 7-1 for examples that show how different types of Rules are created for different event types
- *MAINVIEW AutoOPERATOR for MQSeries Installation and User Guide* for more information about creating Rules for MQSeries events.

Using Primary Commands

On the **COMMAND** line of the Rule Processor Detail Control panel (or any of the panels used in Rule creation), you can enter the primary commands that are shown in Table 6-1, as a shortcut to a specific panel.

Table 6-1 Using Primary Commands in the Rule Processor

Command	Displays	Description
blank (Default)	Selection Criteria panel when you press Enter	When you press Enter without specifying a primary command, the Selection Criteria panel for the event type that you specified in the Event Type field is displayed. If you continue to press Enter without entering a primary command, you progress through the six Rule creation panels.
S1	Selection Criteria - <i>event type</i> panel	Use this panel to specify attributes of an event that a Rule must match before the Rule is fired. You must specify at least one criteria.
SV	Variable Dependencies - <i>event type</i> panel	Use this panel to set the values of variables when you want to use variables for any of your selection criteria. Use of this panel is optional.
A1	Action Specification - <i>event type</i> panel	When the selection criteria of a Rule matches an event and the Rule is fired, the actions specified on this panel are taken by the Rule.
AA	Alert Action(s) I - <i>event type</i> panel	Only some of the Rules you create will issue MAINVIEW AutoOPERATOR ALERTs as part of the actions the Rule takes. For those Rules, use this panel to add or delete the ALERT to be issued.
AD	Alert Action(s) II - <i>event type</i> panel	This panel is a continuation of the Alert Action(s) I panel and includes additional fields that can be used while creating an MAINVIEW AutoOPERATOR ALERT from a Rule.

Step 1. Using Selection Criteria Fields

Each event type has its own selection criteria panel and when you create a Rule for an event, the first panel displayed is the Selection Criteria - event type panel. The **event type** field shows the name of event type that you specified in the **Event Type** field on the Rule Processor Detail Control panel.

Not every selection criteria field can be used for every event type. The second column Table 6-2 on page 6-4 shows which event types can use a specific selection criteria field. Depending on which event type you create a Rule for, a panel for that event type appears and contains a subset of the criteria listed in Table 6-2 on page 6-4.

The following figure shows an example of the Selection Criteria panel for a MSG-initiated Rule.

```

BMC Software ----- Selection Criteria - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ==>

          Rule-set === AAORUL00          Rule-id  === ICH70001

Text Description:
Text ID      ==> ICH70001                Ignore leading plus: Y
Text String (Enter Below):

Issuer Identification:
Job name     ==>                        Name of issuer
Type        ==>                        (JOB, STC, or TSO)
Jobclass     ==>                        Job class of issuer
Acct Info    ==>                        Job accounting information
RACF User    ==>                        RACF Userid
RACF Group   ==>                        RACF Group name
Route Codes  ==>
Desc Codes   ==>
Console ID   ==>                        Destination Console
Console Name ==>                        Destination Console Name

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Describing Selection Criteria Fields

The following table lists all of the available selection criteria fields for all event types. Note that Time-Initiated Rules do not use any of the selection criteria listed here. To see the selection criteria for Time-initiated Rules, refer to “Creating TIME-Initiated Rules” on page 7-20.

Table 6-2 Selection Criteria Fields and Event Types

Selection Criteria Field	Event Type	Description
Acct Info	CMD EXT IMS JES3 MSG	Enter up to 33 bytes of accounting information for the issuer of the event. SHARED variables, EVENT variables, and pattern matching can be used in this field.
Alarm ID	ALRM	Enter the Alarm ID associated with the Alarm. SHARED variables, EVENT variables, and pattern matching can be used in this field.
CICS TDQ	CICS	Enter the one- to four-character name of the CICS Transient Data Queue where the event originated. SHARED variables, EVENT variables, and pattern matching can be used in this field.
Console ID	CMD JES3 MSG	Specify the console ID of a specific MVS console associated with the message. This field is 33 characters long. Valid console ID numbers are 1-255. SHARED variables and EVENT variables can be used in this field.
Console Name	CMD JES3 MSG	Specify the console name of a specific MVS console associated with the message. This field is 33 characters long. SHARED variables, EVENT variables, and pattern matching can be used in this field.
Context	ALRM	Enter the context associated with the Alarm. SHARED variables, EVENT variables, and pattern matching can be used in this field.
Desc codes	JES3 MSG	Enter one or more MVS descriptor codes associated with the message. Separate each descriptor code by a blank. Valid codes are 1-128. Variables and pattern matching cannot be used in this field.
Ignore leading plus	MSG	Enter Y to ignore a leading plus + in the message. Messages issued from a non-authorized program will have a plus sign inserted at the beginning of the message. Using this option allows messages that are issued from both authorized and non-authorized programs to be trapped by a single rule. If you specify this option, take additional steps to ensure that the message is being issued from a trusted job, such as by verifying the user ID, job name, accounting code, or some other information provided by the Rule or EXEC. Note: Use this option carefully to ensure that your Rules do not fire accidentally.
Jobclass	CMD EXT IMS JES3 MSG	Specify a one byte identifier for the job class of a batch job issuer. Valid values are 0-9 and A-Z. SHARED variables and EVENT variables can be used in this field.

Selection Criteria Field	Event Type	Description
Job name	CMD DB2 EXT IMS JES3 MSG	Specify a 1- to 8-byte name of the address space that issued the event. This field is usually used with the Type field which specifies the type of address space issuing the event. SHARED variables, EVENT variables, and pattern matching can be used in this field.
Key	ALRT	Specify the key used to uniquely identify an ALERT within a queue. Use this field to create Rules for ALERTs written with specific keys. SHARED variables, EVENT variables, and pattern matching can be used in this field. For more information about ALERT keys, refer to the <i>MAINVIEW AutoOPERATOR Advanced Automation Guide</i> .
Name	VAR	Specify the name of a SHARED pool variable so that, when its value changes, it will trigger a Rule to fire. SHARED variables can be used in this field.
Origin	JRNL	Enter the name of the address space that issued the message for the BBI-SS PAS Journal. SHARED variables, EVENT variables, and pattern matching can be used in this field.
Priority	ALRM	Enter the priority associated with the Alarm. SHARED variables, EVENT variables, and pattern matching can be used in this field.
Queue	ALRM ALRT	Specify the name of the queue to which the ALERT is targeted. Use this field to create Rules for ALERTs destined for specific queues. SHARED variables, EVENT variables, and pattern matching can be used in this field. For more information about ALERT queues, refer to the <i>MAINVIEW AutoOPERATOR Advanced Automation Guide</i> .
RACF Group	CMD EXT IMS JES3 MSG	Enter the RACF group ID (1- to 8-bytes) for the address space that issued the message. The RACF Group ID is taken from the GROUP keyword of the job card. SHARED variables, EVENT variables, and pattern matching can be used in this field.
RACF User	CMD EXT IMS JES3 MSG	Enter the RACF user ID (1- to 8-bytes) for the address space that issued the message. The RACF user ID is taken from the USERID keyword of the job card. SHARED variables, EVENT variables, and pattern matching can be used in this field.

Selection Criteria Field	Event Type	Description
Route codes	JES3 MSG	<p>Enter one or more MVS route codes associated with the message. Separate each route code by a blank. Valid codes are 1-128.</p> <p>Variables and pattern matching cannot be used in this field.</p>
Scope	ALRM	<p>Enter the scope associated with the Alarm.</p> <p>SHARED variables, EVENT variables, and pattern matching can be used in this field.</p>
Text ID	All event types	<p>Enter the 1- to 16-byte Text ID associated with the message. The length of the Text ID is determined by the first blank character in the text. The Text ID for the message is the first word, delimited by a blank, or the first 16 characters if the first word is longer than 16 characters.</p> <p>To select on more information, use the Text String field to enter message text.</p> <p>SHARED variables, EVENT variables, and pattern matching can be used in this field.</p> <p>For event type MSG:</p> <ul style="list-style-type: none"> • If you journal the message, the entire message (including the reply ID) is written to the journal. • If you use IMFTEXT the reply ID is stripped from the message. • WORD1 is the first word after the reply ID. • TEXT STRING does not include the reply ID.
Text String	All event types	<p>Specify message text to be matched in addition to the Text ID. In this field, you must enter the Text ID and additional information from the message text for the Rule to match before it fires. This field supports up to 75 bytes.</p> <p>SHARED variables, EVENT variables, and pattern matching can be used in this field.</p> <p>For event type MSG:</p> <ul style="list-style-type: none"> • If you journal the message, the entire message (including the reply ID) is written to the journal. • If you use IMFTEXT the reply ID is stripped from the message. • WORD1 is the first word after the reply ID. • TEXT ID is the first word after the reply ID. • TEXT STRING does not include the reply ID.

Selection Criteria Field	Event Type	Description
Type	ALRM CMD EXT IMS JES3 MSG	Specify a 1- to 3-byte name for the type of address space that issued the event. Valid values are JOB, STC, or TSO. This field provides additional information about the address space that issued the event. SHARED variables and EVENT variables can be used in this field.
User ID	ALRM	Enter the User ID associated with the Alarm. SHARED variables, EVENT variables, and pattern matching can be used in this field.
Variable is	VAR	Specify the action that will fire the Rule; valid values are as follows: Created The Rule will fire when the variable is created in the SHARED pool. Deleted The Rule will fire when the variable is deleted from the SHARED pool. Upd The Rule will fire when the value of the variable is updated in the SHARED pool.

Step 2. Specifying Variables as Additional Selection Criteria

The second panel displayed is the Variable Dependencies - event type panel. The Variable Dependencies panel is the same for all event types, but the **event type** field shows the name of event type you specified in the **Event Type** field on the Rule Processor Detail Control panel.

Use the Variable Dependencies panel to define the value of variables to be tested as part of the selection criteria for an event.

You can use any SHARED or LOCAL variable on this panel.

Note: Refer to the chapter describing variables in the *MAINVIEW AutoOPERATOR Advanced Automation Guide* for general information regarding SHARED and LOCAL variables. Refer to “Using Variables in the Rule Processor” on page 8-6 for more information about using variables in the Rule Processor applications.

You also can use the variable **WORD n** , where n is the number of the word in the message. For example, **WORD3** represents the third word in the message text.

Figure 6-1 shows an example of the Variable Dependencies panel.

Figure 6-1 **Variable Dependencies Panel**

[illegible]

In Figure 6-1, the QSMFID variable is specified to equal the value SYSB or SYSC, which means that if you use the variable QSMFID on the Selection Criteria panel for an event, the Rule will fire only when the value of QSMFID matches SYSB or SYSC.

Note: You can code variables with or without the ampersand (&) on this panel. The panel displays the **Variable-name** field without the & even if it was coded previously.

Using AND/OR Logic on the Variable Dependencies Panel

You can use AND/OR logic on the Variable Dependencies panel to combine multiple variable evaluations.

The logic operates as follows:

- The use of **AND** implies that entries on the panel are grouped together in parenthesis.
- The use of **OR** separates the groups of information.

Describing Variable Dependencies Fields

Table 6-3 describes the fields on this panel.

Table 6-3 Variable Dependencies Panel Field Descriptions (Part 1 of 3)

Field	Description		
Variable-Name	Is the name of the SHARED or LOCAL variable to be tested.		
Op	Is the operand used in the variable evaluation; valid operands are as follows:		
	Operand	Character or Hexadecimal	Description
	EQ	Character	Specifies that the variable must equal a specified value.
	NE	Character	Specifies that the variable must not be equal to a specified value.
	GT	Character	Specifies that the variable must be greater in value than a specified value.
	LT	Character	Specifies that the variable must be less in value than a specified value.
	GE	Character	Specifies that the variable must be greater than or equal in value to a specified value.
	LE	Character	Specifies that the variable must be less than or equal in value to a specified value.
	IN	Character	Specifies that the queried variable includes the value specified. For example, use this operand to verify that the text MQRO_COD is contained in the value of the MQSeries variable IMFQ_MD_REPORT (Report Options) which resolves to MQRO_PASS_CORREL_ID MQRO_COD.
	EX	Hexadecimal	Specifies that the queried variable excludes the value specified. For example, use this operand to verify that the text MQRO_COA is excluded from the value of the MQSeries variable IMFQ_MD_REPORT (Report Options) which resolves to MQRO_PASS_CORREL_ID MQRO_COD.
	HE	Hexadecimal	Specifies that the queried variable is equal to the specified value. For example, the MQSeries variable IMFQ_MD_CORRELID (Correlation ID) contains the hexadecimal value x'80BE'. The value '80BE' is specified on the Variable Dependencies panel to the right of the operand. When the event occurs, the Rule fires (provided all other selection criteria are also matched) because the queried variable contains the specified value x'80BE'.

Table 6-3 Variable Dependencies Panel Field Descriptions (Part 2 of 3)

Field	Description		
Op (cont.)	Is the operand used in the variable evaluation; valid operands are as follows:		
	Operand	Character or Hexadecimal	Description
	HN	Hexadecimal	<p>Specifies that the queried variable is not equal to the specified value.</p> <p>For example, the MQSeries variable IMFQ_MD_CORRELID (Correlation ID) contains the value x'73C4'. The value '73C5' is specified on the Variable Dependencies panel to the right of the operand. When the event occurs, the Rule fires (provided all other selection criteria are also matched) because the queried variable does not contain the specified value x'73C5'.</p>
	HG	Hexadecimal	<p>Specifies that the queried variable is greater than the specified value.</p> <p>For example, the MQSeries variable IMFQ_MD_CORRELID (Correlation ID) contains the value x'80BF'. The value '80BE' is specified on the Variable Dependencies panel to the right of the operand. When the event occurs, the Rule fires (provided all other selection criteria are also matched) because the queried variable is greater than the specified value x'80BE'.</p>
	HL	Hexadecimal	<p>Specifies that the queried variable is less than the specified value.</p> <p>For example, the MQSeries variable IMFQ_MD_CORRELID (Correlation ID) contains the value x'2A20'. The value '2A20' is specified on the Variable Dependencies panel to the right of the operand. When the event occurs, the Rule does not fire because the queried variable is not less than the specified value x'2A20'.</p>
	GX	Hexadecimal	<p>Specifies that the queried variable is greater than or equal to the specified value.</p> <p>For example, the MQSeries variable IMFQ_MD_CORRELID (Correlation ID) contains the value x'2A21'. The value '2A21' is specified on the Variable Dependencies panel to the right of the operand. When the event occurs, the Rule fires (provided all other selection criteria are also matched) because the queried variable is greater than or equal to the specified value x'2A21'.</p>

Table 6-3 Variable Dependencies Panel Field Descriptions (Part 3 of 3)

Field	Description		
Op (cont.)	Is the operand used in the variable evaluation; valid operands are as follows:		
	Operand	Character or Hexadecimal	Description
	LX	Hexadecimal	Specifies that the queried variable is less than or equal to the specified value. For example, the MQSeries variable IMFQ_MD_CORRELID (Correlation ID) contains the value 'x'0A21'. The value '0B21' is specified on the Variable Dependencies panel to the right of the operand. When the event occurs, the Rule fires (provided all other selection criteria are also matched) because the queried variable is less than or equal to the specified value 'x'0B21'.
	FO	Hexadecimal	Specifies the value to be used as a mask to test for bits set in the queried variable. For example, a SHARED variable, FLAG1, contains the value 'x'00C00080'. The value '00000080' is specified on the Variable Dependencies panel to the right of the operand. When the event occurs, the Rule fires (provided all other selection criteria are also matched) because bit 7 is set to on in both the variable and the value specified.
	FN	Hexadecimal	Specifies the value to be used as a mask to test for bits not set in the queried variable. For example, a SHARED variable, FLAG1, contains the value 'x'00C00080'. The value '000000A0' is specified on the Variable Dependencies panel to the right of the operand. When the event occurs, the Rule fires (provided all other selection criteria are also matched) because bit 5 is set to <i>on</i> in the specified mask but not in the variable.
Variable-Value	Is the value the variable is compared against.		
AND/OR	<p>Is the logical operand used to combine multiple values.</p> <p>Valid operands are as follows:</p> <p>AND Use AND when you want more than one condition to be true.</p> <p>OR Use OR when any one of multiple conditions can be true.</p>		

Step 3. Using Action Specification Fields

The third panel displayed during Rule creation is the Action Specification - event type panel. The **Event Type** field shows the name of the event type you specified in the **Event Type** field on the Rule Processor Detail Control panel.

Not every action specification field can be used for every event type. The second column shows which event types can use a specific action specification field. Depending on which event type you create a Rule for, a panel for that event type appears and will contain a subset of the actions listed below.

The following figure shows an example of the Action Specification panel for a MSG-initiated Rule.

BMC Software ----- Action Specification - MSG ----- MAINVIEW AutoOPERATOR	
COMMAND ==>	
Rule-set == AAORUL00	Rule-id == ICH70001
Display at dest. ==> YES	Journal ==> SYSLOG Display ==>
EXEC Name/Parms ==>	
Send (TSO) ==>	
Cmd (Type MVS) ==>	
Set Variable ==>	=
Reword Msg ==>	
Notify ==>	Outboard Pager ID
Info ==>	Info for Outboard
Route codes ==>	
Descriptor codes ==>	
Console ID ==>	Destination Console ID
Console Name ==>	Dest. Console ID Name
Update Rout/Desc Codes ==>	(ADD/REPL)
DOMID ==>	Delete operator message
Issue WTO Msg ==>	
DOM MSG ==>	Issue message when DOM
Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes	

Describing Action Specification Fields

The following table lists all of the available actions you can select for all the event types.

Action Specification Field	Event Type	Description
Console ID	MSG	<p>Specify a message's new destination console ID. This field is 33 characters long. SHARED variables are valid.</p> <p>Only one console ID can be specified. A value from 1-99 is valid.</p>
Console Name	MSG	<p>Specify a message's new destination console name. This field is 33 characters long. SHARED variables are valid.</p> <p>Only one console name can be specified. Console names are 1-8 characters long. Named consoles are available only on MVS/SP4.</p>

Action Specification Field	Event Type	Description
Cmd (Type xxx)	All event types	<p>Enter one or more commands to be issued where xxx represents a user-specified command type (up-to 3 characters). Possible values are as follows:</p> <p>Blank No command is issued.</p> <p>BBI Allows you to specify BBI commands.</p> <p>CIC Allows you to specify CICS commands or transactions. The CICS command must contain a target; for example:</p> <pre>TARGET:CICSTRAN command_text 'parms'</pre> <p>The CICS transaction parms must be enclosed in single quotation marks; for example:</p> <pre>Cmd (type CIC) ==> TARGET:CICSTRAN transaction_name 'parm1 parm2'</pre> <p>For a list of CICS commands you can use, refer to the section "CICS Command Parameters" in the <i>MAINVIEW AutoOPERATOR Advanced Automation Guide</i>.</p> <p>Note: When you use any of the listed commands in this field, do not prefix the command name with IMFEXEC CICS.</p> <p>Only CICS transactions that run terminal unattached are supported. For terminal attached transactions, use the OSPI application (see the <i>MAINVIEW AutoOPERATOR Advanced Automation Guide</i>).</p> <p>IMS enables you to specify IMS commands.</p> <p>MVS Allows you specify MVS console commands in this field; the address space that originated the event will issue the commands.</p> <p>SS Allows you to specify MVS commands that originate from the BBI-SS PAS.</p> <p>MQ Allows you to specify MQSeries commands.</p> <p>In addition:</p> <ul style="list-style-type: none"> This field is 126 characters long. EVENT and SHARED variables can be used in this field. You can use multiple commands by separating them with double colon marks. MQSeries commands must begin with the name of the queue manager that processes the command specified. For example: queuemgrname:command text <p>For documentation about how to use the Cmd(MQ) field, refer to the <i>MAINVIEW AutoOPERATOR for MQSeries Installation and User Guide</i>.</p>

Action Specification Field	Event Type	Description
Descriptor codes	MSG	<p>Specify new MVS descriptor codes or replace the original MVS descriptor codes of the message (38-character maximum). Separate each descriptor code entered with a blank. This field must be used in conjunction the Update Rout/Desc Codes field to specify either replacement or addition of new codes.</p> <p>Variables cannot be used in this field.</p>
Display at dest.	ALRT CICS DB2 IMS JRNL JES3 MSG	<p>Specify whether the message will be displayed at the destination it was originally sent to. Valid values are YES and NO. YES is the default. If you specify NO, the message is suppressed.</p> <p>Variables cannot be used in this field.</p> <p>Note:</p> <ul style="list-style-type: none"> • If you journal the message, the entire message (including the reply ID) is written to the journal. • If you use IMFTEXT, the reply ID is stripped from the message. • WORD1 is the first word after the reply ID. • TEXT ID is the first word after the reply ID. • TEXT STRING does not include the reply ID. <p>For CICS events, When any line of a multiline message is suppressed in the TDQ (XTDOUT) exit, all subsequent lines of the multiline message are discarded (not presented to the XTDOUT exit).</p> <p>If a Rule fires that handles a CICS message and has NO specified in this field, all remaining lines of the multiline message will be discarded (not presented to the Rules Processor).</p> <p>This restriction is due to the design of the CICS exit.</p> <p>Given this CICS behavior, you cannot suppress a part of any multiline CICS message and still receive the rest of the multiline message in a Rule.</p>
DOMID	All event types	Specify the name of a SHARED variable that contains the delete-operator-message ID of a previously issued WTO.
DOM MSG	All event types	Tells MAINVIEW AutoOPERATOR to issue message DX9505I when the action message which caused this Rule to fire is deleted.

Action Specification Field	Event Type	Description
EXEC name/Parms	All event types	<p>Specify the name of an EXEC that the Rule can schedule and any parameters that you want to send to the EXEC. This field is 56 characters long. Separate the EXEC name and any parameters by a blank.</p> <p>Note that the first parameter specified in this field will be the first parameter passed to the EXEC, which means the message ID and any message text will not be passed to the EXEC. To have the message ID and message text passed to the EXECs, use the variable IMFTEXT in this field.</p> <p>EVENT and SHARED variables can be used in this field.</p>
Info	All event types	<p>Specify a 1-80 alphanumeric character string of information to be displayed in the area of an outboard pager managed by MAINVIEW AutoOPERATOR Elan. Use this field in conjunction with the Notify field.</p> <p>EVENT and SHARED variables can be used in this field.</p>
Issue WTO Msg	All event types	<p>Specify a 1-125 character message to be sent to an MVS console. The message is issued without routing or descriptor codes unless specified with the R (route) or D (descriptor code) keywords (or both), and followed by a colon (:).</p> <p>For example, to issue a message with Descriptor code 2 and Route code 11:</p> <pre>Issue WTO Msg ==> D(2) R(11): EMPMSG88 &WORD1 ISSUED</pre> <p>The message may be selected by another Rule. The default is blank, which means no message is issued.</p> <p>EVENT and SHARED variables are valid.</p> <p>For event type MSG:</p> <ul style="list-style-type: none"> • If you journal the message, the entire message (including the reply ID) is written to the journal. • If you use IMFTEXT, the reply ID is stripped from the message. • WORD1 is the first word after the reply ID. • TEXT ID is the first word after the reply ID. • TEXT STRING does not include the reply ID.

Action Specification Field	Event Type	Description
Journal	ALRT CICS CMD DB2 EXT IMS JES3 MSG TIME VAR	<p>Specify whether the message will be recorded in the BBI-SS PAS Journal. Valid values are YES, NO, and REW. The default is NO.</p> <p>A value of REW copies a reworded message to the BBI-SS PAS Journal. Use REW with the Reword Msg field.</p> <p>For event type MSG:</p> <ul style="list-style-type: none"> • If you journal the message, the entire message (including the reply ID) is written to the journal. • If you use IMFTEXT, the reply ID is stripped from the message. • WORD1 is the first word after the reply ID. • TEXT ID is the first word after the reply ID. • TEXT STRING does not include the reply ID.
Notify	All event types	<p>Enter the telephone number of the MAINVIEW AutoOPERATOR Elan operator ID to be notified using an outboard pager. This field is 33 characters long. EVENT and SHARED variables are valid.</p> <p>Specify the telephone number exactly as it must be dialed. The Elan operator ID must exist in the Elan Operator Profile. Use this field in conjunction with the Info field.</p>
Reject Command	CMD	Specify whether command will be issued or rejected.
Reword ALERT	ALRT	<p>Use this field to change the ALERT text to be sent to its destination. Note that the reworded text is used for all subsequent Rule matching comparisons if you use an Automation strategy of ALL. The length of the reworded text cannot exceed 255 characters.</p> <p>EVENT and SHARED variables are valid in this field. The reworded text is used in subsequent Rule Selection Criteria comparisons.</p>
Reword CMD	CMD	<p>Enter a new command that replaces the original command. All attributes associated with the command such as console ID are retained. The maximum length of a command replacement is 126 characters.</p> <p>This parameter should not be coded for Rules that are used in a release prior to MAINVIEW AutoOPERATOR 6.2 because this field will be displayed as a message on the console and in syslog.</p>

Action Specification Field	Event Type	Description
Reword Msg	IMS JES3 JRNL MSG CICS	<p>Use this field to change the message text to be sent to its destination. Note that the reworded text is used for all subsequent Rule matching comparisons if you use an Automation strategy of ALL.</p> <p>For the IMS and JES3 event types, the length of the reworded text cannot exceed the length of the original message plus 20 characters. For example, if the length of the original text is 40 characters long, the reworded text cannot exceed 60 characters.</p> <p>For the JRNL and MSG event types, the length of the reworded text cannot exceed the length of the original message.</p> <p>For CICS Transient Data messages, the maximum length of the reworded message is limited to 212 characters. If variables are used, the maximum length is 255 characters (after the contents of the variables are resolved). Any resolved value greater than 255 characters will be truncated to 255 at the time the Rule fires.</p> <p>EVENT and SHARED variables are valid in this field. The reworded message text is used in subsequent Rule Selection Criteria comparisons.</p>
Route codes	MSG	<p>Specify new MVS route codes or replace the original MVS route codes of the message (61 characters maximum). Separate each route code entered with a blank. This field must be used in conjunction the Update Rout/Desc Codes field to specify either replacement or addition of new codes.</p> <p>Variables cannot be used in this field.</p>
Send (TSO)	All event types	<p>Send a copy of the message using the MVS SEND command to 1-5 TSO user IDs. Separate each TSO user ID by a blank.</p> <p>This field is 40 characters long. EVENT and SHARED variables are valid in this field.</p>
Set variable	All event types	<p>Set, increase amount, or decrees amount for the value of a SHARED variable. A variable's numerical value may be increased or decreased by specifying +n or -n, where n is a number.</p> <p>The first field is 33 characters long and SHARED variables are valid. Use the first field to specify the variable to be modified.</p> <p>The second field is 17 characters long and SHARED variables and constants are valid. Use the second field to assign a new value (with a variable or an unsigned constant) or modify a numeric value (with a signed constant).</p> <p>Note: The variables set by using this field are set asynchronously to the firing of the Rule. In other words, there will be a slight delay before the value of the variables are set.</p>

Action Specification Field	Event Type	Description
SYSLOG Display	MSG	Specify whether the message will be recorded in the MVS SYSLOG. Valid values are YES and NO. YES is the default.
Update Rout/Desc Codes	MSG	<p>Add or replace the route and descriptor codes that are specified in the Route Codes or Desc Codes fields.</p> <p>Valid values are ADD (to add new codes) or REPL (to replace old codes with new ones specified).</p> <p>Variables cannot be used in this field.</p>

Step 4. Creating ALERTs as Additional Action Specification

Occasionally, you might want a Rule to generate a MAINVIEW AutoOPERATOR ALERT as part of the actions a Rule takes. MAINVIEW AutoOPERATOR ALERTs are special exception messages that MAINVIEW AutoOPERATOR creates for operators to notify them of exceptional situations that might require their intervention and attention.

When you create an ALERT from a Rule, a set of Alert Action(s) - event type panels are always displayed after the Action Specification panel; these panels are as follows:

- Alert Action(s) I - event type

This panel is the primary ALERT action specification panel and, with the exception of the ALRT event type, it provides the same fields for all event types. The panel displayed for ALRT event type has an additional field; refer to “Creating ALERTs for the ALRT Event Type” on page 6-22 for more information.

- Alert Action(s) II - event type

This panel is the secondary ALERT action specification panel that contains new functions added in MAINVIEW AutoOPERATOR Version 4, Release 1.

The **event type** field shows the name of event type you specified in the **Event Type** field on the Rule Processor Detail Control panel.

These panels contain the keywords that match the keywords you would use to create an ALERT from an IMFEXEC CLIST or REXX EXEC and all the functions that you can specify in an IMFEXEC CLIST or REXX EXEC are available on these panels.

The following sections describe the Alert Action(s) action specification panels.

Creating ALERTs for All Event Types except ALERT Events

Figure 6-3 shows an example of the Alert Action(s) I Specification panel that is displayed for all event types *except* **ALRT**.

Figure 6-3 ALERT Action(s) I: Primary Panel for All Events except ALRT

```

BMC Software ----- Alert Action(s) I - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                     TGT --- AO63
          Rule-set == RULTEST1                    Rule-id == FT407IA
Function ==>                                     (ADD, DELETE, DELETEQ)
Key       ==>
Text      ==>

Queues    ==>                                     Alert Queue Name(s)
Priority  ==>                                     (CRIT,MAJ,MIN,WARN,INFO,CLEAR)
Color     ==>                                     RED,PINK,YEL,DKBL,LTBL,GRE,WHI
PCMD      ==>

System    ==>                                     Return to target after PCMD
Exec      ==>                                     Follow-up EXEC
Help      ==>                                     Associated HELP Panel
Targets   ==>                                     Target System
Udata     ==>                                     User Data
Origin    ==>                                     Origin
User      ==>                                     Userid
Alarm     ==>                                     Sound Alarm (YES/NO)
Publish   ==>                                     Messages (ADD/REPLACE/NO)

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Note that this panel shows three actions for the **Function** field:

```

Function ==>                                     (ADD, DELETE, DELETEQ)

```

Possible actions are **ADD**, **DELETE**, and **DELETEDQ**. The **Function** field has an additional action (**MODIFY**) when you are creating a Rule for ALRT (see “Creating ALERTs for the ALRT Event Type”).

Creating ALERTs for the ALRT Event Type

The following figure shows an example of the ALERT Action(s) I specification panel when you are creating a Rule for the ALRT event type.

Figure 6-4 ALERT Action(s) Specification Panel for the ALRT Event Type

```

BMC Software ----- Alert Action(s) I - ALRT ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63
      Rule-set === RULCICS           Rule-id === FT407IA
Function ===>                        (ADD, DELETE, DELETEDQ, MODIFY)
Key      ===>
Text     ===>

Queues   ===>                                Alert Queue Name(s)
Priority ===>                                (CRIT,MAJ,MIN,WARN,INFO,CLEAR)
Color    ===>                                RED,PINK,YEL,DKBL,LTBL,GRE,WHI
PCMD     ===>

System   ===>                                Return to target after PCMD
Exec     ===>                                Follow-up EXEC
Help     ===>                                Associated HELP Panel
Targets  ===>                                Target System
Udata    ===>                                User Data
Origin   ===>                                Origin
User     ===>                                Userid
Alarm    ===>                                Sound Alarm (YES/NO)
Publish  ===>                                Messages (ADD/REPLACE/NO)

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

The difference between this panel and the one displayed for all other event types is that for an ALRT-initiated Rule, you can choose *an additional keyword* for the FUNCTION keyword:

```

Function ===>                                (ADD, DELETE, DELETEDQ, MODIFY)

```

The **MODIFY** action is available only when the event is ALRT. For more information, refer to “Modifying an ALERT in a Rule: Using the MODIFY Function” on page 6-30.

Figure 6-5 shows an example of the secondary panel you can use to create ALERTs for all event types.

Figure 6-5 ALERT Action(s) II: Secondary ALERT Creation Panel

```

BMC Software ----- Alert Action(s) II - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                           TGT --- AO63

      Rule-set == RULCICS      Alert      Rule-id == FT407IA

Auto Delete      ==>                                           Yes/No
Retain           ==>                                           Yes/No

Escalate Direction ==>                                           Up/Down
Interval         ==>
                  ==>
                  ==>
                  ==>
                  ==>
                  ==>
Disposition      ==>                                           Keep/Delete

Exec             ==>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

This panel contains the following ALERT functions added in MAINVIEW AutoOPERATOR Version 4, Release 1:

Auto Delete

Allows you to specify that when an action message is DOMed, the associated ALERT is also deleted automatically.

In other words, when you create Rules for action messages that issue ALERTs, you can specify that the ALERT is deleted automatically when the action message is DOMed.

This field appears only when you are creating ALERTs for the MSG event type.

If you do not want to delete operator action messages (perform a DOM), specify **No** in the **Auto Delete** field.

Retain

Allows you to specify an ALERT will be retained across BBI-SS PAS restarts (both cold and warm restarts) and MVS IPLs.

Escalate

Allows you to specify an ALERT can increase or decrease in severity over user-specified periods of time.

Additional keywords used with **Escalate** are **INTERVAL**, **DISPOSITION**, and **EXEC**.

For more information about these fields, refer to Table 6-5 on page 27 and for examples of how these fields work, refer to “Creating ALERTs from Rules” on page 7-47.

To read more about ALERTs, refer to

- Chapter 11, “Managing by Exception: Using MAINVIEW AutoOPERATOR ALERTs” for information about using the ALERT Management Facility to handle ALERTs
- The section for the IMFEXEC ALERT command statement in the *MAINVIEW AutoOPERATOR Advanced Automation Guide*.

Describing Alert Action(s) I Fields

The following figure shows an example of the first ALERT Action(s) I panel. Table 6-4 on page 25 describes the fields on this panel.

BMC Software ----- Alert Action(s) I - MSG ----- MAINVIEW AutoOPERATOR	
COMMAND ==>	TGT --- AO63
Rule-set == RULTEST1	Rule-id == FT407IA
Function ==>	(ADD, DELETE, DELETEQ)
Key ==>	
Text ==>	
Queues ==>	Alert Queue Name(s)
Priority ==>	(CRIT, MAJ, MIN, WARN, INFO, CLEAR)
Color ==>	RED, PINK, YEL, DKBL, LTBL, GRE, WHI
PCMD ==>	
System ==>	Return to target after PCMD
Exec ==>	Follow-up EXEC
Help ==>	Associated HELP Panel
Targets ==>	Target System
Udata ==>	User Data
Origin ==>	Origin
User ==>	Userid
Alarm ==>	Sound Alarm (YES/NO)
Publish ==>	Messages (ADD/REPLACE/NO)
Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes	

Table 6-4 Alert Action(s) I Panel Field Descriptions (Part 1 of 2)

Field	Description
Function	<p>Is the function to be performed.</p> <p>This field is used in conjunction with the Queue field where possible values are</p> <p>ADD Adds an ALERT to the specified queue.</p> <p>DELETE Deletes an ALERT from the specified queue.</p> <p>DELETEQ Deletes the ALERT and the ALERT queue.</p> <p>MODIFY Available with the ALRT event type only.</p> <p>For the ALRT event type, using MODIFY allows you to change any ALERT specifications <i>except</i> Key, Queue, and Target. For more information, refer to "Modifying an ALERT in a Rule: Using the MODIFY Function" on page 6-30.</p>
Key	<p>Is the 64-alphanumeric ALERT identifier used to uniquely identify the ALERT in the queue.</p> <p>You must specify a unique key for every ALERT you create. If you create a second ALERT with the same key as an already existing ALERT in the queue, the second ALERT will overwrite the first ALERT.</p> <p>This field <i>cannot be modified</i> by using the MODIFY function for an ALRT-initiated Rule.</p>
Text	<p>Is the text of an ALERT message sent when the ALERT is generated.</p> <p>The text is shown on the panel of the ALERT Detail application. The text can use any shared or function variable, any &WORDn variables, or literals.</p>
Queues	<p>Is a 33-byte field specifying the names of the ALERT queues.</p> <p>This field is used in conjunction with the Function field where valid values are ADD (to add an ALERT to the specified queue), DELETE (to delete an ALERT from the specified queue) or DELETEQ (to delete the ALERT and the ALERT queue).</p> <p>This field can contain any shared or function variable. The default is MAIN.</p> <p>You can specify multiple queues by separating them with double colon marks (::). If a queue name is a variable, you must use a third colon; for example:</p> <p>&IMFOJOB:::MAIN</p> <p>This field <i>cannot be modified</i> by using the MODIFY function for an ALRT-initiated Rule.</p>
Priority	<p>Is the priority of the ALERT. Valid values are CRITICAL, MAJOR, MINOR, WARNING, INFORMATIONAL, and CLEARING. The default is INFO.</p>
Color	<p>Is the color of the alert text.</p> <p>This field overrides the color assigned by Alert Priority. Valid colors are RED, PINK, YELLOW, DKBLUE, LTBLUE, GREEN, and WHITE.</p>
PCMD	<p>Is a 142-byte field specifying the primary command associated with the ALERT that can be executed from the ALERT Management Facility. (This field can contain variables that can expand to 252 bytes.)</p>
System	<p>Allows you to issue the SYSTEM command after the PCMD is issued. This action passes control back to the target. Valid values are Yes and No; Yes is the default.</p>
Exec	<p>Is a 33-byte field specifying the name of the follow-up EXEC (and any parameters) associated with the ALERT. The EXEC can be scheduled from the ALERT Management Facility.</p>

Table 6-4 Alert Action(s) I Panel Field Descriptions (Part 2 of 2)

Field	Description
Help	Is the name of the help panel associated with the ALERT that can be accessed from the ALERT Management Facility.
Targets	Is the target system the ALERT is sent to. You can specify multiple targets; separate each target name with a blank. This field <i>cannot be modified</i> by using the MODIFY function for an ALERT-initiated Rule.
Udata	Is any desired user data string.
Origin	Is a new origin to assign to the ALERT. The default is the SSID where the ALERT was issued.
User	Is the user ID assigned to the ALERT.
Alarm	Specifies whether to emit an audible alarm.
Publish	Specifies whether an ALERT is published and how it is published to connected PATROL Enterprise Manager workstations that have subscribed to receive ALERTs through the General Message Exchange (GME). Possible values are REPLACE (where the previous ALERT is deleted from the workstation before the new ALERT is sent), ADD (where a new ALERT is added to the workstation), and NO (where the ALERT is not written to the workstation). The default setting for Publish is set with the PUBLISH= parameter in BBPARM member AAOALSxx. For more information about setting the default setting for Publish, refer to the <i>MAINVIEW AutoOPERATOR Customization Guide</i> where the Dynamic Parameter Manager application is described or where BBPARM members for MAINVIEW AutoOPERATOR are documented.

Describing Alert Action(s) II Fields

The following figure shows an example of the second ALERT Action(s) Specification panel. Table 6-5 on page 27 describes the fields on this panel.


```

BMC Software ----- Alert Action(s) II - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63

          Rule-set === RULCICS      Alert      Rule-id === FT407IA

Auto Delete      ===>                                     Yes/No
Retain           ===>                                     Yes/No

Escalate Direction ===>                                     Up/Down
Interval         ===>
                  ===>
                  ===>
                  ===>
                  ===>
                  ===>
Disposition      ===>                                     Keep/Delete

Exec            ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Table 6-5 Alert Action(s) II Panel Field Descriptions (Part 1 of 2)

Field	Description
Auto Delete	<p>Appears only when you are creating a Rule for MSG event types.</p> <p>Specify that, when the original action message is DOMed, the ALERT is deleted automatically.</p>
Retain	<p>Specifies whether the ALERT should be created as a nonvolatile ALERT. Possible values are YES NO; the default is NO.</p> <p>Refer to the <i>MAINVIEW AutoOPERATOR Customization Guide</i> where the BBPARM member AAOALSxx is documented, and see the documentation for the ALERTNV= parameter for more information about retaining ALERTs.</p> <p>Nonvolatile ALERTs are saved to disk and continue to exist across BBI-SS PAS restarts and MVS IPLs. Be aware that creating nonvolatile ALERTs is <i>very expensive</i> as DASD I/Os are required to create and delete ALERTs. Therefore, nonvolatile ALERTs should be used for very specific situations where it is absolutely necessary and meaningful for an ALERT to survive a BBI-SS PAS or MVS restart.</p> <p>This feature cannot be used in conjunction with the Escalate parameter; <i>they are mutually exclusive</i>.</p>

Table 6-5 Alert Action(s) II Panel Field Descriptions (Part 2 of 2)

Field	Description
Escalate Direction	<p>Allows you to create ALERTs that will either increase or decrease in priority over user-specified periods of time.</p> <p>This parameter cannot be used in conjunction with the RETAIN parameter; <i>they are mutually exclusive</i>.</p> <p>Possible values for this parameter are</p> <p>Up Specifies that the ALERT will be upgraded in severity when the time interval elapses.</p> <p>Down Specifies that the ALERT will be downgraded in severity when the time interval elapses.</p> <p>The default is Up.</p> <p>When you use the Escalate Direction field, you must specify <i>at least one time interval</i> in the Interval field.</p>
Interval	<p>Used with the Escalate Direction field.</p> <p>Use this field to specify over what period of time (in minutes) the ALERT will change in priority. You can specify up to six separate intervals of time over which the priority of the ALERT can be changed.</p> <p>You must specify <i>at least one time interval</i> or the Escalate parameter will not work. When the final priority is reached, the action specified by the Disposition parameter is taken.</p> <p>In addition, when you want to have an ALERT change in priority, you must always code one interval more than the number of changes. No priority changes occur in the last interval.</p> <p>For example, if you want an ALERT to change from MAJOR to CRITICAL, you must code two interval periods.</p> <p>Refer to the section “Examples of ALERT Escalation” in the <i>MAINVIEW AutoOPERATOR Advanced Automation Guide</i> for more information.</p>
Disposition	<p>Used with the Escalate Direction field.</p> <p>Allows you to specify what will happen to an ALERT when the ALERT reaches its final priority. Possible values are</p> <p>Keep Specifies that the ALERT will be kept when the last (or only) interval expires.</p> <p>Delete Specifies that the ALERT will not be kept when the last (or only) interval expires.</p> <p>The default is Delete.</p>
Exec	<p>Used with the Escalate Direction field.</p> <p>Allows you to specify the name of an EXEC that will be scheduled when the ALERT reaches its final priority level.</p> <p>You also can specify parameters that will be passed to the EXEC when it is scheduled.</p>

Table 6-6 shows the variables that are available when you create Rules for the ALERT event type.

Table 6-6 Variables Available for Creating Rules for ALERT Events (Part 1 of 2)

Name	Contents	Length/Format
AMFKEY	key of the ALERT	1-64 / Character
AMFTEXT	text of the ALERT	0-255 / Character
AMFALARM	alarm value of the ALERT	1 / Y (YES) or N (NO)
AMFCOLOR	color of ALERT	6 / As specified by COLOR parameter
AMFEDIR	increase or decrease the priority of the ALERT when it is escalated	1 / Character (U or D)
AMFEDISP	keep or delete the ALERT at the final escalation level	1 / Character (K or D)
AMFEEXEC	name of EXEC and EXEC parameters scheduled at final escalation priority	0 to 255 / Character
AMFEINT1 AMFEINT2 AMFEINT3 AMFEINT4 AMFEINT5 AMFEINT6	number (in minutes) from 0 to 9999	4 / Numeric (or null)
AMFEXEC	EXEC and EXEC parameters associated with the ALERT	0-256 / Character
AMFHELP	extended ALERT member name	8 / Character
AMFIDATE	date ALERT was issued	9 / dd-mmm-yy
AMFITIME	time ALERT was issued	8 / hh:mm:ss
AMFORGN	origin of ALERT	1-8 / Character
AMFPCMD	primary command specified in ALERT	0-256 / Character
AMFPRIOR	priority of ALERT	13 / As specified in PRIORITY parameter
AMFPSYS	value for SYSTEM keyword (could be either YES or NO)	1 / Character (Y or null)
AMFPUB	value of the PUBLISH keyword when an ALERT is created	2-7/ADD, REPLACE, or NO
AMFPUBS	value of the PUBLISH keyword as specified in the request to create the ALERT	2-7/ADD, REPLACE, or NO
AMFQUEUE	name of queue for ALERT	8 / Character
AMFRTAIN	specifies whether to retain an ALERT across BBI-SS PAS warm and cold starts	1 / Character (Y or N)

Table 6-6 **Variables Available for Creating Rules for ALERT Events (Part 2 of 2)**

Name	Contents	Length/Format
AMFSSID	system from which ALERT was issued	8 / Character
AMFTGT	target to which ALERT was issued	1-8 / Character
AMFUDATA	user data string	0-256 / Character
AMFUSER	name of the user ID that the ALERT is addressed to	8 / Character

Modifying an ALERT in a Rule: Using the MODIFY Function

For an ALERT event, you can use a Rule to change any of the original ALERT's settings (*except* Key, Queue, and Target) before it appears in an ALERT queue.

The ability to modify an ALERT makes it convenient for you to select already existing ALERTs with which to use the Retain or Escalate functions without having to rewrite the ALERTs. For example, any existing ALERT can be modified by a Rule using the MODIFY function on the Alert Action(s) panel I to

- survive a BBI-SS PAS cold start (with the Retain keyword)
- increase or decrease in severity over user-specified intervals of time (with the Escalate keyword)
- change any of the ALERT's existing values (except Key, Queue, and Target) to new values

The following sections describe some of the effects of using the MODIFY function.

If You Leave Fields Blank with MODIFY

If you use the MODIFY function and leave fields for the new ALERT blank, the original ALERT specifications will be used.

If You Enter New Values in Fields with MODIFY

When you use the MODIFY function and enter new values in a field, the new ALERT will contain the new values *except for* the **Key**, **Queue**, and **Target** fields. These three fields cannot be changed with MODIFY.

You also can enter a variable name where the variable is set to a null value. When you use such a variable, one of two things can happen to the field:

- The value of the field is deleted.
- The value of the field is set back to its default value.

For example, if the original ALERT issues an EXEC and you do not want the new ALERT to schedule an EXEC, enter a null variable in the **EXEC** field. The new ALERT will not schedule an EXEC.

However, if you enter a null variable for the **Alarm** field while modifying an ALERT, the ALARM keyword uses the default value of NO.

The following table lists which field's values are deleted when a null variable is entered and which field's values are reset to their default setting.

Fields Whose Values Are Deleted	Fields Whose Values Are Reset to Default
Exec Help Interval PCMD Text Udata User	Alarm Color Dispose Escalate Function Origin Priority Retain System

If You Change a Field Related to Escalation

If any **ALERT** field related to escalation is modified, all escalation parameters must be specified again. Please note that the priority of the ALERT affects escalation. If the ALERT priority is changed without specifying new escalation parameters, the modified ALERT will have no escalation.

If You Change an ALERT's Color

If you MODIFY and specify a color for the priority of the ALERT, the ALERT will appear with the new color. However, if the priority of the ALERT is set to either increase or decrease with the **Escalate** field, the ALERT reverts to the default color associated with the new priority.

For More Information

Refer to “Creating ALERTs from Rules” on page 7-47 for an example of how you can use the MODIFY function.

Chapter 7 Creating Rules: Examples

This chapter provides examples of how to create

- Rules that suppress messages from appearing on the console
- TIME-initiated Rules
- Rules that issue MAINVIEW AutoOPERATOR ALERTs
- Rules that use variables

The *MAINVIEW AutoOPERATOR for MQSeries Installation and User Guide* contains information about how to create Rules for MQSeries events.

Creating a Rule to Suppress a Message

The following section provides two examples of Rules that suppress the \$HASP395 job ENDED and IEF450I messages from the console. These messages were chosen because they often appear on the console and can be easily automated by Rules.

The first example shows suppressing the \$HASP395 message from the console if it was issued for any job beginning with BAO.

The second example shows searching the IEF450I message only when it contains an abend code and a specific job name. When the two conditions are met, a message will be sent to a TSO user ID.

Example 1: Creating a Suppression Rule

To write a Rule that suppresses the \$HASP395 message, follow these steps:

- Step 1** From the Automation Control panel, enable the Rule Set to which you want to add the Rule. You can add Rules only to enabled Rule Sets.

Figure 7-1 Creating a Suppression Rule (1): Automation Control Panel (Example 1)

```

BMC Software ----- Automation Control ----- RULMAGIE ENABLED
COMMAND ==>
Primary commands: Add, Statshow, Cmdshow
TGT ==> AO63
DATE --- 01/02/14
TIME --- 14:14:39

Automation Status ==> ACTIVE (Active, Inactive)
Automation Strategy ==> INDIVIDUAL (Individual, All, First)
Honor MPF Suppression ==> NO (NO/YES)

Automation Statistics
Total Events 48,538 Display suppressed 67
Events Handled 22,407 Hardcopy suppressed 0
Current arrival rate 2 / sec Rule generated Alerts 22,223
Peak arrival rate 99 / sec Rule invoked Execs 276

Automation Library
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (SA)ve
(M)ove, (B)efore or (A)fter, (F)ilter Criteria
LC Rule-Set Status Rules Fired Filtered Date Time Strategy
___ AAORUL00 ENABLED 15 22,223 48,573 23-FEB-97 08:18:59 FIRST
___ AAORULBC ENABLED 54 188 48,573 23-FEB-97 08:18:59 FIRST
___ AAORULCM ENABLED 52 59 48,573 23-FEB-97 08:18:59 FIRST
___ RULCICS ENABLED 25 1 48,573 23-FEB-97 08:19:00 FIRST
e_ RULMAGIE DISABLED 8 0 38 23-FEB-97 14:14:38 FIRST
___ AAORULBA DISABLED N/A N/A N/A N/A N/A
___ AAORULBB DISABLED N/A N/A N/A N/A N/A
***** END OF DATA *****

```

The Rule Set is enabled.

- Step 2** Select the Rule Set with the S line command (for Select) in the LC field next to the Rule Set name.

Figure 7-2 Creating a Suppression Rule (1): Automation Control Panel (Example 2)

```

BMC Software ----- Automation Control ----- RULMAGIE ENABLED
COMMAND ==>
Primary commands: Add, Statshow, Cmdshow          TGT ==> AO63
                                                    DATE --- 01/02/14
                                                    TIME --- 14:14:39

Automation Status      ==> ACTIVE          (Active, Inactive)
Automation Strategy    ==> INDIVIDUAL      (Individual, All, First)
Honor MPF Suppression ==> NO              (NO/YES)

                        Automation Statistics
Total Events           48,538   Display suppressed           67
Events Handled         22,407   Hardcopy suppressed          0
Current arrival rate   2 / sec   Rule generated Alerts   22,223
Peak arrival rate      99 / sec   Rule invoked Execs     276

                        Automation Library
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (SA)ve
              (M)ove, (B)efore or (A)fter, (F)ilter Criteria
LC  Rule-Set Status  Rules    Fired  Filtered  Date      Time      Strategy
---  AAORUL00 ENABLED    15     22,223   48,573  23-FEB-97 08:18:59 FIRST
---  AAORULBC ENABLED    54       188   48,573  23-FEB-97 08:18:59 FIRST
---  AAORULCM ENABLED    52       59   48,573  23-FEB-97 08:18:59 FIRST
---  RULCICS  ENABLED    25        1   48,573  23-FEB-97 08:19:00 FIRST
s_  RULMAGIE ENABLED     8         0    38   23-FEB-97 14:14:38 FIRST
---  AAORULBA DISABLED   N/A     N/A     N/A     N/A     N/A
---  AAORULBB DISABLED   N/A     N/A     N/A     N/A     N/A
***** END OF DATA *****

```

The Rule Set Overview panel is displayed. Figure 7-3 on page 7-4 shows an example of a Rule Set named RULMAGIE and the Rules that it contains.

Figure 7-3 **Creating a Suppression Rule (1): Rule Set Overview Panel (Example 1)**

BMC Software ----- Rule Set Overview -----					MAINVIEW AutoOPERATOR				
COMMAND ==> add					TGT --- AO63				
Rule Set ID: RULMAGIE Ruleset Strategy ==> FIRST					DATE ---				
01/01/01/02/23									
Primary commands: Add, Save, Sort, Unsort, Reset, Filter					TIME --- 14:15:11				
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (DE)lete, (I)nsert									
(C)opy/(CC)opy, (M)ove/(MM)ove, (B)efore or (A)fter, (R)repeat									
Sort Criterion:					right/left				
LC	Rule-id	Stat	Text-id	Type	Fired	EXEC	Changed		ID
___	DUMMY001	DIS	\$HASP*	MSG	0		01/02/21 14:58	BAOMXY2	
___	RUL00001	ENA	*TEST	JRNL	0		01/02/21 15:00	BAOMXY2	
___	RUL98888	ENA	\$HASP395	MSG	0		01/02/21 15:20	BAOMXY2	
___	RUL98887	ENA	IEF450I	MSG	0		01/02/21 14:07	MES1	
___	RUL98886	ENA		TIME	0		01/02/21 14:14	MES1	
___	RUL98885	SUS		TIME	0		01/02/21 14:15	MES1	
___	*TEST	ENA	*TEST	ALRT	0		01/02/21 14:43	MES1	
___	TESTRULE	ENA	IEF403I	MSG	0		01/02/21 17:47	BAOMXY2	
***** END OF DATA *****									

Step 3 To add a new Rule, use the ADD primary command on the COMMAND line.

The Rule Processor Detail Control panel is displayed.

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                                    TGT --- AO63
                                                                TIME --- 14:23:18
                                                                DATE --- 01/02/23

The following options are displayed in sequence, or may
be selected by entering the two-character code

S1 - Selection Criteria           A1 - Action Specification
SV - Variable Dependencies        AA - Alert Actions(s) I
                                   AD - Alert Actions(s) II

Rule ID          ==>
Event Type       ==>           Type of event ( ? for list)
Initial Mode     ==> ENABLED   (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched       ==>           (Maximum # times matched within INTERVAL, 0-100)
in seconds       ==>           (Interval length, 1-99999 seconds)
then status      ==>           (SUSPEND, DISABLE, NOACTION)

Application information:
Group            ==>           Function            ==>           Code            ==>
Author           ==> BAOMXY2  Description         ==>
Last Modified by          on              at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 4 Enter the name of the new Rule (the Rule ID) and the event type of the new Rule.

This example shows adding a new Rule named NEWRULE1 with an event type of MSG. See Figure 7-4.

Figure 7-4 Creating a Suppression Rule (1): Enter Rule Information on the Rule Processor Detail Control Panel

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
TGT --- AO63
TIME --- 14:23:18
DATE --- 01/02/23

The following options are displayed in sequence, or may
be selected by entering the two-character code

S1 - Selection Criteria      A1 - Action Specification
SV - Variable Dependencies   AA - Alert Actions(s) I
                             AD - Alert Actions(s) II

Rule ID      ==> NEWRULE1
Event Type   ==> MSG      Type of event ( ? for list)
Initial Mode ==> ENABLED  (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>          (Interval length, 1-99999 seconds)
then status  ==>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==>          Function      ==>          Code      ==>
Author       ==> BAOMXY2  Description   ==>
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 5 Press **Enter**; the Selection Criteria - MSG panel is displayed (Figure 7-5 on page 7-6).

Specify the event criteria that the Rule must match to cause the Rule to fire.

Figure 7-5 Creating a Suppression Rule (1): Selection Criteria Panel

```

BMC Software ----- Selection Criteria - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63

                Rule-set === RULMAGIE                Rule-id === NEWRULE1

Text Description:
Text ID      ===>                                     Ignore leading plus: Y
Text String (Enter Below):

Issuer Identification:
Job name     ===>                                     Name of issuer
Type        ===>                                     (JOB, STC, or TSO)
Jobclass     ===>                                     Job class of issuer
Acct Info    ===>                                     Job accounting information
RACF User    ===>                                     RACF Userid
RACF Group   ===>                                     RACF Group name
Route Codes  ===>
Desc Codes   ===>
Console ID   ===>                                     Destination Console
Console Name ===>                                     Destination Console Name

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 6 Enter \$HASP395 in the Text-ID field and BAO* in the Job Name field.

```

BMC Software ----- Selection Criteria - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63

                Rule-set === RULMAGIE                Rule-id === NEWRULE1

Text Description:
Text ID      ===> $HASP395                             Ignore leading plus: Y
Text String (Enter Below):

Issuer Identification:
Job name     ===> BAO*                                   Name of issuer
Type        ===>                                     (JOB, STC, or TSO)
Jobclass     ===>                                     Job class of issuer
Acct Info    ===>                                     Job accounting information
RACF User    ===>                                     RACF Userid
RACF Group   ===>                                     RACF Group name
Route Codes  ===>
Desc Codes   ===>
Console ID   ===>                                     Destination Console
Console Name ===>                                     Destination Console Name

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 7 Press Enter; the Variable Dependencies - MSG panel is displayed (Figure 7-6 on page 7-7).

Figure 7-6 **Creating a Suppression Rule (1): Variable Dependencies Panel**

[illegible]

Step 8 This example does not make use of variables; press **Enter**.

The Action Specification - MSG panel is displayed.

Step 9 Specify the actions that the Rule will take when it is fired.

```

BMC Software ----- Action Specification - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ==> TGT --- AO63
      Rule-set == RULMAGIE      Rule-id == NEWRULE1
Display at dest. ==> YES      Journal ==> SYSLOG Display ==>
EXEC Name/Parms ==>
Send (TSO IDs) ==>
Cmd (Type MVS ) ==>

Set Variable ==> ==>
Reword Msg ==>

Notify ==> Outboard Pager ID
Info ==>

Console ID ==> Destination Console ID
Console Name ==> Dest. Console ID Name
Route codes ==>
Descriptor codes ==>
Update Rout/Desc Codes ==> (ADD/REPL)
DOM Id ==> Delete Operator Message
Issue WTO Msg ==>

DOM Message ==> (Yes/No)
Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 10 To specify that the Rule is suppressed from the console, written to the BBI-SS PAS Journal, and a notification is sent to a TSO user ID

- Enter **NO** for **Display at dest.** field to suppress the message from appearing on the console.
- Enter **YES** for **Journal** to write the message to the BBI-SS PAS Journal.

Note: For event type MSG, if you journal the message, the entire message (including the reply ID) is written to the journal.

- Enter the TSO user ID in the **Send (TSO IDs)** field to send a notification to an user ID.

See Figure 7-7.

Figure 7-7 Creating a Suppression Rule (1): Action Specification Panel

```

BMC Software ----- Action Specification - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                           TGT --- AO63
      Rule-set == RULMAGIE           Rule-id == NEWRULE1
Display at dest. ==> NO           Journal ==> YES           SYSLOG Display ==>
EXEC Name/Parms ==>
Send (TSO IDs)   ==> BAOMES1
Cmd (Type MVS ) ==>

Set Variable     ==>                               ==>
Reword Msg       ==>

Notify          ==>                               Outboard Pager ID
Info            ==>

Console ID       ==>                               Destination Console ID
Console Name     ==>                               Dest. Console ID Name
Route codes      ==>
Descriptor codes ==>
Update Rout/Desc Codes ==>                               (ADD/REPL)
DOM Id           ==>                               Delete Operator Message
Issue WTO Msg    ==>

DOM Message      ==>                               (Yes/No)
Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 11 Press **Enter**; the Alert Action(s) I - MSG panel is displayed (Figure 7-8 on page 7-9).

Figure 7-8 Creating a Suppression Rule (1): Alert Action(s) I Panel

```

BMC Software ----- Alert Action(s) I - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63

      Rule-set === RULMAGIE           Rule-id  === NEWRULE1
Function ===>                         (ADD, DELETE, DELETEQ)
Key      ===>
Text     ===>

Queues   ===>                               Alert Queue Name(s)
Priority ===>                               (CRIT,MAJ,MIN,WARN,INFO,CLEAR)
Color    ===>                               RED,PINK,YEL,DKBL,LTBL,GRE,WHI
PCMD     ===>

System   ===>                               Return to target after PCMD
Exec     ===>                               Follow-up EXEC
Help     ===>                               Associated HELP Panel
Targets  ===>                               Target System
Udata    ===>                               User Data
Origin   ===>                               Origin
User     ===>                               Userid
Alarm    ===>                               Sound Alarm (YES/NO)
Publish  ===>                               Messages (ADD/REPLACE/NO)

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 12 This Rule will not issue an ALERT; press **Enter** and the Alert Action(s) II - MSG panel is displayed (Figure 7-9).

Figure 7-9 Creating a Suppression Rule (1): Alert Action(s) II Panel

```

BMC Software ----- Alert Action(s) II - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63

      Rule-set === RULMAGIE   Alert   Rule-id  === NEWRULE1

Auto Delete      ===>                               Yes/No
Retain           ===>                               Yes/No

Escalate Direction ===>                               Up/Down
Interval         ===>
                  ===>
                  ===>
                  ===>
                  ===>
                  ===>
Disposition      ===>                               Keep/Delete

Exec            ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 13 Press **Enter**; the Rule Processor Detail Control panel is redisplayed.

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
                                TGT --- AO63
                                TIME --- 16:09:31
                                DATE --- 01/02/23

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria          A1 - Action Specification
    SV - Variable Dependencies       AA - Alert Actions(s) I
                                      AD - Alert Actions(s) II

Rule ID      ==> NEWRULE1
Event Type   ==> MSG      Type of event ( ? for list)
Initial Mode ==> ENABLED  (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>          (Interval length, 1-99999 seconds)
then status  ==>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==>          Function      ==>          Code   ==>
Author       ==> BAOMXY2 Description   ==>
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 14 Press **END** to apply changes.

The Rule Set Overview panel is displayed (Figure 7-10).

Figure 7-10 Creating a Suppression Rule (1): Rule Set Overview Panel (Example 2)

```

BMC Software ----- Rule Set Overview ----- MAINVIEW AutoOPERATOR
COMMAND ==>
                                TGT --- AO63
                                DATE --- 01/02/23
                                TIME --- 16:13:37
Rule Set ID: RULMAGIE      Ruleset Strategy ==> FIRST
Primary commands: Add, Save, Sort, Unsort, Reset, Filter
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (DE)lete, (I)nsert
              (C)opy/(CC)opy, (M)ove/(MM)ove, (B)efore or (A)fter, (R)repeat
Sort Criterion:
                                           right/left

LC  Rule-id Stat Text-id      Type   Fired EXEC      Changed      ID
---  ---
___ NEWRULE1 ENA $HASP395      MSG     0      01/02/21 15:00 BAOMXY2
___ RUL98888 ENA $HASP395      MSG     2 ES    01/02/23 16:12 BAOMXY2
___ RUL98887 ENA IEF450I       MSG     0      01/02/21 14:07 MES1
___ RUL98886 ENA               TIME     7      01/02/21 14:14 MES1
___ RUL98885 SUS               TIME     0      01/02/21 14:15 MES1
___ *TEST   ENA *TEST          ALRT     0      01/02/21 14:43 MES1
***** END OF DATA *****

```


The Rule is enabled and will begin to fire when the \$HASP395 message is issued from any job beginning with the characters BAO but at this point it is not saved to disk.

Step 15 To save the Rule, enter the **SAVE** primary command on the **COMMAND** line.

If you do not enter the **SAVE** primary command, the following warning is displayed when you press **PF3**:

Figure 7-11 Creating a Suppression Rule (1): Confirming Rule Set Modifications Panel

```

BMC Software ----- Confirm Rule Set Modifications ----- MAINVIEW AutoOPERATOR
COMMAND ==>>                                           TGT --- AO63

+-----+
+ WARNING! Changes made to Rule Set RULMAGIE have not been saved.  Those      +
+ changes were one or more of the following:                                +
+                                                                            +
+   o A Rule was changed.                                                    +
+   o The status of a Rule was modified.                                     +
+   o A Rule was added, deleted, inserted, or copied.                       +
+   o A Rule was moved.                                                      +
+   o The individual Rule Set strategy changed.                             +
+                                                                            +
+ Please do one of the following:                                           +
+                                                                            +
+ - Enter SAVE to save RULMAGIE to the BBIPARM dataset.                     +
+ - Enter NOSAVE to exit WITHOUT saving RULMAGIE to the BBIPARM dataset.    +
+ - Press END to return to Rule Set Overview.                               +
+-----+

```

The options are as follows:

- To save the Rule, enter **SAVE**.
- To cancel saving the newly created Rule, enter **NOSAVE**.
- To return to the Rule Set Overview panel, press **END**.

Example 2: Creating a Suppression Rule with Variables

This example shows how to suppress the IEF450I message when it states the job BCIS0001 abends with a code of S522. This example also shows that the Rule will notify a TSO user ID when the Rule fires. The Rule will be added to the RULMAGIE Rule Set (used in Example 1).

To create this Rule, follow these steps:

Step 1 Enter the ADD primary command on the Rule Set Overview panel.

BMC Software ----- Rule Set Overview ----- MAINVIEW AutoOPERATOR									
COMMAND ==> add					TGT --- AO63				
Rule Set ID: RULMAGIE Ruleset Strategy ==> FIRST					DATE --- 01/02/23				
Primary commands: Add, Save, Sort, Unsort, Reset, Filter					TIME --- 14:15:11				
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (DE)lete, (I)nsert									
(C)opy/(CC)opy, (M)ove/(MM)ove, (B)efore or (A)fter, (R)repeat									
Sort Criterion:					right/left				
LC	Rule-id	Stat	Text-id	Type	Fired	EXEC	Changed		ID
___	DUMMY001	DIS	\$HASP*	MSG	0		01/02/21	14:58	BAOMXY2
___	RUL00001	ENA	*TEST	JRNL	0		01/02/21	15:00	BAOMXY2
___	RUL98888	ENA	\$HASP395	MSG	0		01/02/21	15:20	BAOMXY2
___	RUL98887	ENA	IEF450I	MSG	0		01/02/21	14:07	MES1
___	RUL98886	ENA		TIME	0		01/02/21	14:14	MES1
___	RUL98885	SUS		TIME	0		01/02/21	14:15	MES1
___	*TEST	ENA	*TEST	ALRT	0		01/02/21	14:43	MES1
___	TESTRULE	ENA	IEF403I	MSG	0		01/02/21	17:47	BAOMXY2
___	NEWRULE1	ENA	\$HASP00	MSG	0		01/02/26	10:32	BAOMXY2
***** END OF DATA *****									

The Rule Processor Detail Control panel is displayed (Figure 7-12 on page 7-13).

Figure 7-12 Creating a Suppression Rule (2): Enter Rule Information on the Rule Processor Detail Control Panel

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ===>
                                TGT --- AO63
                                TIME --- 14:23:18
                                DATE --- 01/02/23

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria          A1 - Action Specification
    SV - Variable Dependencies       AA - Alert Actions(s) I
                                    AD - Alert Actions(s) II

Rule ID      ===>
Event Type   ===>          Type of event ( ? for list)
Initial Mode ===> ENABLED (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ===>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ===>          (Interval length, 1-99999 seconds)
then status  ===>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ===>          Function      ===>          Code      ===>
Author       ===> BAOMXY2 Description   ===>
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 2 Enter the new Rule ID and the event type on the Rule Processor Detail Control panel.

This example shows adding a new Rule named NEWRULE2 with an event type of MSG.

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ===>
TGT --- AO63
TIME --- 15:03:51
DATE --- 01/02/21

The following options are displayed in sequence, or may
be selected by entering the two-character code

S1 - Selection Criteria          A1 - Action Specification
SV - Variable Dependencies      AA - Alert Actions(s) I
                                AD - Alert Actions(s) II

Rule ID      ===> NEWRULE2
Event Type   ===> MSG      Type of event ( ? for list)
Initial Mode ===> ENABLED  (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ===>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ===>          (Interval length, 1-99999 seconds)
then status  ===>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ===>          Function      ===>          Code      ===>
Author       ===> BAOMXY2  Description   ===>
Last Modified by BAOMXY2 on 01/02/21 at 14:07

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 3 Press **Enter**; the Selection Criteria - MSG panel is displayed (Figure 7-13 on page 7-15).

Next, you need to specify the event criteria that the Rule must match to cause the Rule to fire.

Figure 7-13 Creating a Suppression Rule (2): Selection Criteria Panel

```

BMC Software ----- Selection Criteria - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                           TGT --- AO63

                Rule-set == RULMAGIE                Rule-id == NEWRULE2

Text Description:
Text ID      ==> IEF450I                                Ignore leading plus: Y
Text String (Enter Below):

Issuer Identification:
Job name     ==>                                         Name of issuer
Type        ==>                                         (JOB, STC, or TSO)
Jobclass     ==>                                         Job class of issuer
Acct Info    ==>                                         Job accounting information
RACF User    ==>                                         RACF Userid
RACF Group   ==>                                         RACF Group name
Route Codes  ==>
Desc Codes   ==>
Console ID   ==>                                         Destination Console
Console Name ==>                                         Destination Console Name

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 4 Enter **IEF450I** (the text-ID) of the message in the **Text ID** field and press **Enter**.

The Variable Dependencies - MSG panel is displayed (Figure 7-14 on page 7-16).

Figure 7-14 **Creating a Suppression Rule (2): Variable Dependencies Panel**

```

BMC Software ----- Variable Dependencies - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                           TGT --- AO63

      Rule-set === RULMAGIE           Rule-id  === NEWRULE2

Variable-name           Op  Variable-Value           OR/
                    AND
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 5 To specify that the Rule will fire only when the IEF450I message states that job BCIS001 has abended with an S522 code, use variables on the Variable Dependencies panel as selection criteria.

Fill in the panel as shown.

```

BMC Software ----- Variable Dependencies - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                           TGT --- AO63

      Rule-set === RULMAGIE           Rule-id  === NEWRULE2

Variable-name           Op  Variable-Value           OR/
                    AND
_____  _____  _____  _____
WORD5_____  EQ  ABEND=S522_____  AND
IMFOJOB_____  EQ  BCIS001_____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____
_____  _____  _____  _____

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

The following list describes how the specifications on this panel will cause the Rule to work:

- The variable *WORD5* means the Rule Processor scans the IEF450I message for the fifth word to see if it resolves to *ABEND=S522*.
- The Rule Processor will check the variable *IMFOJOB* to see if the job name is BCIS001.

The Rule will fire only when both these conditions are true. If one of the variables does not match the variable-value specified above, the Rule will not fire.

Step 6 Press **Enter**; the Action Specifications - MSG panel is displayed (Figure 7-15).

Next, specify the actions that the Rule will take when it is fired.

Figure 7-15 Creating a Suppression Rule (2): Action Specification Panel

BMC Software		----- Action Specification - MSG		----- MAINVIEW AutoOPERATOR	
COMMAND ===>				TGT --- AO63	
Rule-set === RULMAGIE		Rule-id === NEWRULE2			
Display at dest. ===> NO		Journal ===> YES		SYSLOG Display ===>	
EXEC Name/Parms ===>					
Send (TSO IDs) ===> BAOMES1					
Cmd (Type MVS) ===>					
Set Variable ===>		===>			
Reword Msg ===>					
Notify ===>		Outboard Pager ID			
Info ===>					
Console ID ===>		Destination Console ID			
Console Name ===>		Dest. Console ID Name			
Route codes ===>					
Descriptor codes ===>					
Update Rout/Desc Codes ===>		(ADD/REPL)			
DOM Id ===>		Delete Operator Message			
Issue WTO Msg ===>					
DOM Message ===>		(Yes/No)			
Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes					

Step 7 To specify that the message is suppressed from the console, written to the BBI-SS PAS Journal, and a notification is sent to a TSO user ID

- Enter **NO** for **Display at dest.** and the IEF450I message will be suppressed from the console.

- Enter **YES** for **Journal** to have the message written to the BBI-SS PAS Journal.
- Note:** For event type MSG, if you journal the message, the entire message (including the reply ID) is written to the journal.
- Enter the user ID in the **Send (TSO IDs)** field and a message will be sent to the user ID stating that the Rule has fired.

Step 8 Press **Enter**; the Alert Action(s) I - MSG panel is displayed (Figure 7-16).

Figure 7-16 Creating a Suppression Rule (2): Alert Action(s) I Panel

BMC Software ----- Alert Action(s) I - MSG ----- MAINVIEW AutoOPERATOR	
COMMAND ==>	TGT --- AO63
Rule-set == RULMAGIE	Rule-id == NEWRULE2
Function ==>	(ADD, DELETE, DELETEQ)
Key ==>	
Text ==>	
Queues ==>	Alert Queue Name(s)
Priority ==>	(CRIT,MAJ,MIN,WARN,INFO,CLEAR)
Color ==>	RED,PINK,YEL,DKBL,LTBL,GRE,WHI
PCMD ==>	
System ==>	Return to target after PCMD
Exec ==>	Follow-up EXEC
Help ==>	Associated HELP Panel
Targets ==>	Target System
Udata ==>	User Data
Origin ==>	Origin
User ==>	Userid
Alarm ==>	Sound Alarm (YES/NO)
Publish ==>	Messages (ADD/REPLACE/NO)
Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes	

Step 9 This Rule will not issue an ALERT; press **Enter** and the Alert Action(s) II - MSG panel is displayed (Figure 7-17 on page 7-19).

Figure 7-17 Creating a Suppression Rule (2): Alert Action(s) II Panel

```

BMC Software ----- Alert Action(s) II - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63

          Rule-set === RULMAGIE      Alert      Rule-id === RUL98888

Auto Delete      ===>                                     Yes/No
Retain           ===>                                     Yes/No

Escalate Direction ===>                                     Up/Down
Interval         ===>
                 ===>
                 ===>
                 ===>
                 ===>
                 ===>
Disposition      ===>                                     Keep/Delete

Exec             ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 10 Press **Enter**; the Rule Processor Detail Control panel is re-displayed (Figure 7-18).

Figure 7-18 Creating a Suppression Rule (2): Rule Processor Detail Control Panel

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63
                                                TIME --- 16:09:31
                                                DATE --- 01/02/23

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria          A1 - Action Specification
    SV - Variable Dependencies      AA - Alert Actions(s) I
                                    AD - Alert Actions(s) II

Rule ID      ===> NEWRULE2
Event Type   ===> MSG      Type of event ( ? for list)
Initial Mode ===> ENABLED  (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ===>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ===>          (Interval length, 1-99999 seconds)
then status  ===>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ===>          Function      ===>          Code      ===>
Author       ===> BAOMXY2  Description   ===>
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 11 Press **END** to apply changes.

The Rule Set Overview panel is displayed.

Step 12 Repeat Step 14 on page 7-10 and Step 15 on page 7-11 to complete saving the Rule NEWRULE2 to Rule Set RULMAGIE.

Creating TIME-Initiated Rules

The following sections provide examples of TIME-initiated Rules, which fire based on what time it is.

Example 1: Creating Simple TIME-Initiated Rules

This example shows how to create a TIME-initiated Rule that begins to fire at midnight and fires every 15 minutes thereafter. The action that the Rule takes is to display initiators.

To create this Rule, follow these steps:

Step 1 Enter the new Rule ID and the event type on the Rule Processor Detail Control panel.

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
                                TGT --- AO63
                                TIME --- 15:05:34
                                DATE --- 01/02/21

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria          A1 - Action Specification
    SV - Variable Dependencies      AA - Alert Actions(s) I
                                    AD - Alert Actions(s) II

Rule ID      ==> NEWRULE3
Event Type   ==> TIME      Type of event ( ? for list)
Initial Mode ==> ENABLED   (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>          (Interval length, 1-99999 seconds)
then status   ==>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==>          Function      ==>          Code   ==>
Author       ==> BAOMXY2  Description   ==> DISPLAY INITS EVERY 15
Last Modified by BAOMXY2 on 01/02/21 at 14:14

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 2 Press **Enter**; the Selection Criteria - TIME panel is displayed (Figure 7-19).

Next, specify the start time for the Rule to fire and the time interval.

For more information about the parameters on the Selection Criteria - TIME panel, see Table 14-2 on page 14-20.

Figure 7-19 Creating a TIME-Initiated Rule (1): Selection Criteria Panel

```

BMC Software ----- Selection Criteria - TIME ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63
                                                    TIME --- 15:05:45

          Rule-set === RULMAGIE                Rule-id === NEWRULE3

Start Specification:
Start Time          ===> 00:00:01                hh:mm:ss or ATSTART

Frequency:
Interval            ===> 00:15:00                hh:mm:ss

Stop Specification:
Stop time           ===> 24:00:00                hh:mm:ss
or
Stop Count          ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 3 Enter the time specifications as follows:

- To specify that the Rule begins firing at midnight, specify **00:00:01** for the **Start Time** field.

A Rule cannot begin firing at **00:00:00**. The earliest after midnight that a Rule can begin firing is one second after midnight.

- To specify that the Rule fires every 15 minutes, enter **00:15:00** for the **Interval** field.
- To specify the Rule should fire all day and all night, specify **24:00:00** for the **Stop time** field.
- Do *not* specify anything in the **Stop Count** field because you already specified a time in the **Stop time** field.

With these specifications, the Rule will fire for the first time at 15 minutes and 1 second after midnight. A message (with message ID AU9999I) appears in the BBI-SS PAS Journal indicating that the Rule fired. The Rule will fire once every 15 minutes and display initiators in the SYSLOG.

Figure 7-21 Creating a TIME-Initiated Rule (1): Action Specification Panel

```

BMC Software ----- Action Specification - TIME ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                           TGT --- AO63

                Rule-set === RULMAGIE                Rule-id  === NEWRULE3

Automation Actions:
Journal          ===>
EXEC Name/Parms  ===>
Send (TSO IDs)   ===> BAOMES1
Cmd (Type MVS )  ===> $DI

Set Variable     ===>                                ===>

Notify           ===>                                Outboard Pager ID
Info            ===>

DOM Id           ===>                                Delete Operator Message
Issue WTO Msg    ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 6 To specify that a notification is sent to a TSO user ID, enter the user ID name in the **Send (TSO IDs)** field.

To specify that the command the Rule issues when it is fired, enter the command in the **CMD (Type MVS)** field. In this case the MVS command is

\$DI

which causes the initiators to be displayed in the SYSLOG.

This command will be issued every 15 minutes and a notification will be sent to TSO user ID BAOMES1.

Step 7 Press **Enter**; the Alert Action(s) I - MSG panel is displayed (Figure 7-22 on page 7-24).

Figure 7-22 Creating a TIME-Initiated Rule (1): Alert Action(s) I Panel

```

BMC Software ----- Alert Action(s) I - TIME ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63
          Rule-set === RULMAGIE          Rule-id === NEWRULE3
Function ===>                                (ADD, DELETE, DELETEQ)
Key      ===>
Text     ===>

Queues   ===>                                Alert Queue Name(s)
Priority ===>                                (CRIT,MAJ,MIN,WARN,INFO,CLEAR)
Color    ===>                                RED,PINK,YEL,DKBL,LTBL,GRE,WHI
PCMD     ===>

System   ===>                                Return to target after PCMD
Exec     ===>                                Follow-up EXEC
Help     ===>                                Associated HELP Panel
Targets  ===>                                Target System
Udata    ===>                                User Data
Origin   ===>                                Origin
User     ===>                                Userid
Alarm    ===>                                Sound Alarm (YES/NO)
Publish  ===>                                Messages (ADD/REPLACE/NO)

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 8 This Rule will not issue an ALERT; press **Enter** and the Alert Action(s) II - MSG panel is displayed (Figure 7-23).

Figure 7-23 Creating a TIME-Initiated Rule (1): Alert Action(s) II Panel

```

BMC Software ----- Alert Action(s) II - TIME ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63
          Rule-set === RULMAGIE    Alert    Rule-id === NEWRULE3

Retain          ===>                                Yes/No

Escalate Direction ===>                                Up/Down
Interval        ===>
                ===>
                ===>
                ===>
                ===>
                ===>
Disposition     ===>                                Keep/Delete

Exec            ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 9 Press **Enter**; the Rule Processor Detail Control panel is redisplayed (Figure 7-24).

Figure 7-24 Creating a TIME-Initiated Rule (1): Rule Processor Detail Control Panel

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                         TGT --- AO63
                                                    TIME --- 16:09:31
                                                    DATE --- 01/02/23

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria                A1 - Action Specification
    SV - Variable Dependencies            AA - Alert Actions(s) I
                                         AD - Alert Actions(s) II

Rule ID      ===> NEWRULE3
Event Type   ===> TIME      Type of event ( ? for list)
Initial Mode ===> ENABLED   (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ===>           (Maximum # times matched within INTERVAL, 0-100)
in seconds   ===>           (Interval length, 1-99999 seconds)
then status  ===>           (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ===>           Function      ===>           Code      ===>
Author       ===> BAOMXY2   Description   ===>
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 10 Press **END** to apply changes.

The Rule Set Overview panel is displayed.

Step 11 Repeat Step 14 on page 7-10 and Step 15 on page 7-11 to complete saving the Rule NEWRULE3 to Rule Set RULMAGIE.

Important

If the subsystem on which a TIME-initiated Rule is fired comes up after the specified Start Time and before the specified Stop Time (or stop time implied by the Stop Count value), the firing of the Rules behaves as though the Rule fired on the Start Time and every interval thereafter.

Example 2: Creating a TIME-Initiated Rule with ATSTART

This example shows how to create a TIME-initiated Rule that begins to fire at BBI-SS PAS startup and fires every 15 minutes for a total of 10 times. After the Rule fires 10 times, the Rule will stop firing and it will not begin firing until the next BBI-SS PAS startup. The action that the Rule takes is to display initiators.

To create this Rule, follow these steps:

- Step 1** Enter the new Rule ID and the event type on the Rule Processor Detail Control panel.

Figure 7-25 Creating a TIME-Initiated Rule (2): Rule Processor Detail Control Panel (Example 1)

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ===>
TGT --- AO63
TIME --- 15:07:07
DATE --- 01/02/21

The following options are displayed in sequence, or may
be selected by entering the two-character code

SI - Selection Criteria      AI - Action Specification
SV - Variable Dependencies  AA - Alert Actions(s) I
                             AD - Alert Actions(s) II

Rule ID      ===> NEWRULE4
Event Type   ===> TIME      Type of event ( ? for list)
Initial Mode ===> ENABLE    (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ===>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ===>          (Interval length, 1-99999 seconds)
then status  ===>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ===>          Function      ===>          Code   ===>
Author       ===> BAOMXY2  Description   ===> DISPLAY INITS AT ATSTART
Last Modified by BAOMXY2 on 01/02/21 at 14:15

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

- Step 2** Press **Enter**; the Selection Criteria - TIME panel is displayed (Figure 7-26 on page 7-27).

Next, specify the start time for the Rule to fire and the time interval.

Figure 7-26 Creating a TIME-Initiated Rule (2): Selection Criteria Panel

```

BMC Software ----- Selection Criteria - TIME ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                     TGT --- AO63
                                                TIME --- 15:07:20

          Rule-set === RULMAGIE                Rule-id  === NEWRULE4

Start Specification:
Start Time          ==> ATSTART                hh:mm:ss or ATSTART

Frequency:
Interval            ==> 00:15:00              hh:mm:ss

Stop Specification:
Stop time           ==>                      hh:mm:ss
or
Stop Count          ==> 10

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 3 Enter the time specifications as follows:

- To specify that the Rule begins firing at BBI-SS PAS startup, specify **ATSTART** for the **Start Time** field.
- To specify that the Rule fires every 15 minutes, enter **00:15:00** for the **Interval** field.
- To specify the Rule should fire a total of 10 times, specify **10** for the **Stop Count** field (valid values are 1 to 99999999).

The Rule will stop firing after 10 times and will not fire again until the next BBI-SS PAS startup.

For more information about the parameters on the Selection Criteria - TIME panel, see Table 14-2 on page 14-20.

Step 4 Press **Enter**; the Variable Dependencies - TIME panel is displayed (Figure 7-27 on page 7-28).

Figure 7-27 **Creating a TIME-Initiated Rule (2): Variable Dependencies Panel**

```
BMC Software ----- Variable Dependencies - TIME ----- MAINVIEW AutoOPERATOR
COMMAND ==> TGT --- AO63

Rule-set === RULMAGIE Rule-id === NEWRULE4

Variable-name Op Variable-Value OR/AND
-----
```

Variable-name	Op	Variable-Value	OR/ AND
	---	-----	----
	---	-----	----
	---	-----	----
	---	-----	----
	---	-----	----
	---	-----	----
	---	-----	----
	---	-----	----
	---	-----	----
	---	-----	----
	---	-----	----
	---	-----	----
	---	-----	----
	---	-----	----
	---	-----	----

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

Step 5 This example does not make use of variables; press **Enter**.

The Action Specification - TIME panel is displayed (Figure 7-28 on page 7-29). Specify the actions the Rule will take when it is fired.

Figure 7-28 Creating a TIME-Initiated Rule (2): Action Specification Panel

```

BMC Software ----- Action Specification - TIME ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                           TGT --- AO63

                Rule-set === RULMAGIE                Rule-id  === NEWRULE4

Automation Actions:
Journal          ===>
EXEC Name/Parms  ===>
Send (TSO IDs)   ===> BAOMES1
Cmd (Type MVS ) ===> $DI

Set Variable     ===>                                ===>

Notify           ===>                                Outboard Pager ID
Info             ===>

DOM Id           ===>                                Delete Operator Message
Issue WTO Msg    ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 6 To specify that a notification is sent to a TSO user ID, enter the user ID name in the **Send (TSO IDs)** field.

To specify the command that the Rule issues when it is fired, enter the command in the **CMD (Type MVS)** field. In this case the MVS command to be issued is

\$DI

which will cause the initiators to be displayed in the SYSLOG.

This command will be issued every 15 minutes and a notification will be sent to TSO user ID BAOMES1.

Step 7 Press **Enter**; the Alert Action(s) I - MSG panel is displayed (Figure 7-29 on page 7-30).

Figure 7-29 Creating a TIME-Initiated Rule (2): Alert Action(s) I Panel

```

BMC Software ----- Alert Action(s) I - TIME ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63
          Rule-set === RULMAGIE          Rule-id === NEWRULE4
Function ===>                                (ADD, DELETE, DELETEQ)
Key      ===>
Text     ===>

Queues   ===>                                Alert Queue Name(s)
Priority ===>                                (CRIT,MAJ,MIN,WARN,INFO,CLEAR)
Color    ===>                                RED,PINK,YEL,DKBL,LTBL,GRE,WHI
PCMD     ===>

System   ===>                                Return to target after PCMD
Exec     ===>                                Follow-up EXEC
Help     ===>                                Associated HELP Panel
Targets  ===>                                Target System
Udata    ===>                                User Data
Origin   ===>                                Origin
User     ===>                                Userid
Alarm    ===>                                Sound Alarm (YES/NO)
Publish  ===>                                Messages (ADD/REPLACE/NO)

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 8 This Rule will not issue an ALERT; press **Enter** and the Alert Action(s) II - MSG panel is displayed (Figure 7-30).

Figure 7-30 Creating a TIME-Initiated Rule (2): Alert Action(s) II Panel

```

BMC Software ----- Alert Action(s) II - TIME ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63
          Rule-set === RULMAGIE    Alert    Rule-id === NEWRULE4

Retain          ===>                                Yes/No

Escalate Direction ===>                                Up/Down
Interval        ===>
                ===>
                ===>
                ===>
                ===>
                ===>
Disposition     ===>                                Keep/Delete

Exec            ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 9 Press **Enter**; the Rule Processor Detail Control panel is redisplayed (Figure 7-31).

Figure 7-31 Creating a TIME-Initiated Rule (2): Rule Processor Detail Control Panel (Example 2)

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
TGT --- AO63
TIME --- 16:09:31
DATE --- 01/02/23

The following options are displayed in sequence, or may
be selected by entering the two-character code

S1 - Selection Criteria      A1 - Action Specification
SV - Variable Dependencies   AA - Alert Actions(s) I
                             AD - Alert Actions(s) II

Rule ID      ==> NEWRULE4
Event Type   ==> TIME      Type of event ( ? for list)
Initial Mode ==> ENABLED   (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>          (Interval length, 1-99999 seconds)
then status  ==>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==>          Function      ==>          Code      ==>
Author       ==> BAOMXY2  Description   ==>
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 10 Press **END** to apply changes.

The Rule Set Overview panel is displayed.

Step 11 Repeat Step 14 on page 7-10 and Step 15 on page 7-11 to complete saving the Rule NEWRULE4 to Rule Set RULMAGIE.

Creating More Complex Rules

The following examples show how to create Rules using other features of the Rule Processor, such as the criteria match rate fields, and how to resolve compound variables, as part of the primary selection criteria.

The two Rules in this section should be used together. The first Rule in Example 1 (NEWRULE5) shows how to set a variable as a result of an incoming event and then increases the value of the variable by 1.

The second Rule (NEWRULE6) shows how a Rule can fire when the variable value (set by NEWRULE5) has reached or increased past the set limit. First, Example 1 shows how to set a variable whose value increases with each occurrence of the incoming event.

Example 1: Setting a Variable with a Rule

This example shows how to set a variable whose value increases by 1 with each occurrence of the incoming event.

To create this Rule, follow these steps:

- Step 1** Enter the new Rule ID and the event type on the Rule Processor Detail Control panel.

Figure 7-32 Setting a Variable with a Rule: Rule Processor Detail Control Panel (Example 1)

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>>                                         TGT --- AO63
                                                    TIME ---15:45:12
                                                    DATE ---01/02/21

The following options are displayed in sequence, or may
be selected by entering the two-character code

      S1 - Selection Criteria              A1 - Action Specification
      SV - Variable Dependencies           AA - Alert Actions(s) I
                                           AD - Alert Actions(s) II

Rule ID      ==>> NEWRULE5
Event Type   ==>> MSG      Type of event ( ? for list)
Initial Mode ==>> ENABLED  (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>>          (Interval length, 1-99999 seconds)
then status   ==>>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==>> MVS      Function        ==>>          Code   ==>>
Author       ==>> BAOMXY2  Description     ==>> SET VARIABLE, CREATE ALERT
Last Modified by      on      at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

- Step 2** Press **Enter**; the Selection Criteria - MSG panel is displayed (Figure 7-33 on page 7-33).

Next, specify the event criteria that the Rule must match to cause the Rule to fire.

Figure 7-33 Setting a Variable with a Rule: Selection Criteria Panel

```

BMC Software ----- Selection Criteria - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63

          Rule-set === RULMAGIE          Rule-id === NEWRULE5

Text Description:
Text ID      ===> IEF403I                      Ignore leading plus: Y
Text String (Enter Below):

Issuer Identification:
Job name     ===>                               Name of issuer
Type        ===>                               (JOB, STC, or TSO)
Jobclass     ===>                               Job class of issuer
Acct Info    ===>                               Job accounting information
RACF User    ===>                               RACF Userid
RACF Group   ===>                               RACF Group name
Route Codes  ===>
Desc Codes   ===>
Console ID   ===>                               Destination Console
Console Name ==>                               Destination Console Name

Press ENTER to continue, END return to Detail Control, CANCEL to cancel
changes

```

Step 3 Enter **IEF403I** (the text-ID) of the message in the **Text ID** field.

Step 4 Press **Enter**; the Variable Dependencies - MSG panel is displayed (Figure 7-34 on page 7-34).

Figure 7-35 Setting a Variable with a Rule: Action Specification Panel

```

BMC Software ----- Action Specification - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                     TGT --- AO63
          Rule-set === RULMAGIE                    Rule-id === NEWRULE5
Display at dest. ==> YES          Journal ==>          SYSLOG Display ==>
EXEC Name/Parms ==>
Send (TSO IDs) ==>
Cmd (Type MVS ) ==>

Set Variable      ==> a.&imfjtype..&imfjnum           ==> +1
Rword Msg        ==>

Notify           ==>                                Outboard Pager ID
Info             ==>

Console ID       ==>                                Destination Console ID
Console Name     ==>                                Dest. Console ID Name
Route codes      ==>
Descriptor codes ==>
Update Rout/Desc Codes ==>                                (ADD/REPL)
DOM Id           ==>                                Delete Operator Message
Issue WTO Msg    ==>

DOM Message      ==>                                (Yes/No)
Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 6 To specify the variable and the actions for this Rule, do the following:

- To set a variable, enter the variable name in the **Set Variable** field.

The variable set in this example is **a.&imfjtype..&imfjnum**. For more information about how this variable actually resolves, refer to “Creating More Powerful Rules” on page 8-1.

- To increase the value of this variable by 1 every time the Rule Processor sees this event, enter **+1** for the second field in the **Set Variable** field. The variable value is increased by one every time the message is seen by the Rule Processor.

Step 7 Press **Enter**; the Alert Action(s) I - MSG panel is displayed (Figure 7-36 on page 7-36).

Figure 7-36 **Setting a Variable with a Rule: Alert Action(s) I Panel**

```

BMC Software ----- Alert Action(s) I - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63
          Rule-set === RULMAGIE                    Rule-id === NEWRULE5
Function ===>                                     (ADD, DELETE, DELETEQ)
Key       ===>
Text      ===>

Queues    ===>                                     Alert Queue Name(s)
Priority  ===>
(CRIT,MAJ,MIN,WARN,INFO,CLEAR)
Color     ===>
RED,PINK,YEL,DKBL,LTBL,GRE,WHI
PCMD      ===>

System    ===>                                     Return to target after PCMD
Exec      ===>                                     Follow-up EXEC
Help      ===>                                     Associated HELP Panel
Targets   ===>                                     Target System
Udata     ===>                                     User Data
Origin    ===>                                     Origin
User      ===>                                     Userid
Alarm     ===>                                     Sound Alarm (YES/NO)
Publish   ===>                                     Messages (ADD/REPLACE/NO)

Press ENTER to continue, END return to Detail Control, CANCEL to cancel
changes

```

Step 8 This Rule will not issue an ALERT; press **Enter** and the Alert Action(s) II - MSG panel is displayed (Figure 7-37 on page 7-37).

Figure 7-37 Setting a Variable with a Rule: Alert Action(s) II Panel

```

BMC Software ----- Alert Action(s) II - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                           TGT --- AO63

                Rule-set === RULMAGIE      Alert      Rule-id  === NEWRULE5

Retain                ===>                                Yes/No

Escalate Direction    ===>                                Up/Down
Interval              ===>
                    ===>
                    ===>
                    ===>
                    ===>
                    ===>
Disposition          ===>                                Keep/Delete

Exec                  ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 9 Press **Enter**; the Rule Processor Detail Control panel is redisplayed (Figure 7-38).

Figure 7-38 Setting a Variable with a Rule: Rule Processor Detail Control Panel (Example 2)

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                           TGT --- AO63
                                           TIME --- 16:09:31
                                           DATE --- 01/02/23

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria                A1 - Action Specification
    SV - Variable Dependencies            AA - Alert Actions(s) I
                                         AD - Alert Actions(s) II

Rule ID      ===> NEWRULE5
Event Type   ===> TIME      Type of event ( ? for list)
Initial Mode ===> ENABLED   (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ===>           (Maximum # times matched within INTERVAL, 0-100)
in seconds   ===>           (Interval length, 1-99999 seconds)
then status  ===>           (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ===>           Function      ===>           Code      ===>
Author       ===> BAOMXY2   Description   ===>
Last Modified by on at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 10 Press **END** to apply changes.

The Rule Set Overview panel is displayed.

Step 11 Repeat Step 14 on page 7-10 and Step 15 on page 7-11 to complete saving the Rule NEWRULE5 to Rule Set RULMAGIE.

This Rule should be used in conjunction with Rule NEWRULE6 described in Example 2. Rule NEWRULE6 uses the variable value set in NEWRULE5 to determine whether it should fire.

Example 2: Creating a Rule that Fires when a Variable Value Is Met

This example shows how to create a Rule that will fire when the variable set in Example 1 (in NEWRULE5) reaches a specific value.

To create this Rule, follow these steps:

- Step 1** Enter the new Rule ID and the event type on the Rule Processor Detail Control panel.

Figure 7-39 Triggering a Rule with Variables: Rule Processor Detail Control Panel (Example 1)

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                         TGT --- AO63
                                                    TIME ---
15:45:12
  The following options are displayed in sequence, or may  DATE ---
01/02/21
  be selected by entering the two-character code

  S1 - Selection Criteria                          A1 - Action Specification
  SV - Variable Dependencies                       AA - Alert Actions(s) I
                                                    AD - Alert Actions(s) II

Rule ID      ==> NEWRULE6
Event Type   ==> MSG      Type of event ( ? for list)
Initial Mode ==> ENABLED  (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==> 10      (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==> 60      (Interval length, 1-99999 seconds)
then status  ==> SUSPEND (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==> MVS      Function        ==>          Code ==>
Author       ==> BAOMXY2  Description     ==> CREATE ALERT
Last Modified by      on      at

  Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

You should use the Criteria match rate fields to prevent the Rule from over-firing. Occasionally, the Rule Processor will be flooded with the same event due to an abnormal system situation, and you do not want the Rule to fire for every event.

- Step 2** To prevent the Rule in this example from over-firing, fill in the Criteria match rate fields as follows. To specify that the Rule will be suspended when it is matched 10 times in one minute:

- Enter **10** (If matched field) for the number of times the Rule might match incoming events

- Enter **60** (in **seconds** field)
- Enter **SUSPEND** and the Rule will be suspended if the Rule matches an event 10 times or more within one minute (**then statue** field)

Step 3 Press **Enter**; the Selection Criteria - MSG panel is displayed (Figure 7-40).

Next, specify the event criteria that the Rule must match to cause the Rule to fire.

Figure 7-40 Triggering a Rule with Variables: Selection Criteria Panel

```

BMC Software ----- Selection Criteria - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                           TGT --- AO63

                Rule-set == RULMAGIE                Rule-id == NEWRULE6

Text Description:
Text ID      ==> IEF403I                                Ignore leading plus: Y
Text String (Enter Below):

Issuer Identification:
Job name     ==>                                         Name of issuer
Type        ==>                                         (JOB, STC, or TSO)
Jobclass     ==>                                         Job class of issuer
Acct Info    ==>                                         Job accounting information
RACF User    ==>                                         RACF Userid
RACF Group   ==>                                         RACF Group name
Route Codes  ==>
Desc Codes   ==>
Console ID   ==>                                         Destination Console
Console Name ==>                                         Destination Console Name

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 4 Enter **IEF030I** (the text-ID) of the message in the **Text ID** field.

Step 5 Press **Enter**; the Variable Dependencies - MSG panel is displayed (Figure 7-41 on page 7-41).

Figure 7-41 **Triggering a Rule with Variables: Variable Dependencies Panel**

[illegible]

Step 6 Fill in the panel as shown above to specify that the Rule will fire only when the IEF403I message has been seen by the Rule Processor more than 12 times.

The following list describes how the specifications on this panel will cause the Rule to work:

- The variable **&!a.imfjtype.imfjnum** is a stem variable that was set in Example 1 whose value increases by one every time the Rule Processor sees the IEF403I event.
- The Rule will fire when the value of the variable is greater than 12.

There is no other selection criteria for this Rule; therefore, the Rule will fire only when this condition is true.

Step 7 Press **Enter**; the Action Specifications - MSG panel is displayed (Figure 7-42 on page 7-42).

Next, specify the actions the Rule will take when it is fired.

Figure 7-42 Triggering a Rule with Variables: Action Specification Panel

BMC Software ----- Action Specification - MSG ----- MAINVIEW AutoOPERATOR	
COMMAND ===>	TGT --- AO63
Rule-set === RULMAGIE	Rule-id === NEWRULE6
Display at dest. ===> NO	Journal ===> YES
EXEC Name/Parms ===>	SYSLOG Display ===>
Send (TSO IDs) ===>	
Cmd (Type MVS) ===>	
Set Variable ===>	===>
Reword Msg ===>	
Notify ===>	Outboard Pager ID
Info ===>	
Console ID ===>	Destination Console ID
Console Name ===>	Dest. Console ID Name
Route codes ===>	
Descriptor codes ===>	
Update Rout/Desc Codes ===>	(ADD/REPL)
DOM Id ===>	Delete Operator Message
Issue WTO Msg ===>	
DOM Message ===>	(Yes/No)
Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes	

Step 8 To suppress the message from the console and write it to the BBI-SS PAS Journal, specify **NO** for **Display at dest.** and **YES** for **Journal**.

Step 9 Press **Enter**; the Alert Actions I - MSG panel is displayed (Figure 7-43 on page 7-43).

Figure 7-43 Triggering a Rule with Variables: Alert Action(s) I Panel

BMC Software ----- Alert Action(s) I - MSG ----- MAINVIEW AutoOPERATOR	
COMMAND ==>	TGT --- AO63
Rule-set ==> RULMAGIE	Rule-id ==> NEWRULE6
Function ==> add	(ADD, DELETE, DELETEQ)
Key ==> &imfdays&imfrlfrd	
Text ==> job &word2 started more than 12 times	
Queues ==>	Alert Queue Name(s)
Priority ==>	(CRIT,MAJ,MIN,WARN,INFO,CLEAR)
Color ==>	RED,PINK,YEL,DKBL,LTBL,GRE,WHI
PCMD ==>	
System ==>	Return to target after PCMD
Exec ==>	Follow-up EXEC
Help ==>	Associated HELP Panel
Targets ==>	Target System
Udata ==>	User Data
Origin ==>	Origin
User ==>	Userid
Alarm ==>	Sound Alarm (YES/NO)
Publish ==>	Messages (ADD/REPLACE/NO)
Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes	

Step 10 To specify that an ALERT is issued as one of the Rule's actions, you must

- specify ADD for the **Function** field to issue an ALERT
- specify a unique ALERT key in the queue associated with it
 - ALERTs with the same key override existing ones.
 - To create a unique key, this example uses the IMFDAY and IMFRLFRD variables. These variables will resolve to the day of the week and the number of times the Rule was fired. This combination ensures that the key will be unique.
- enter ALERT text that states that the job (which issued the message that triggers this Rule) has started more than 10 times

This text warns the operator that the job might be having difficulty starting and might require operator attention.

Step 11 Press **Enter**; the Alert Actions II - MSG panel is displayed (Figure 7-44 on page 7-44).

Figure 7-44 Triggering a Rule with Variables: Alert Action(s) II Panel

```

BMC Software ----- Alert Action(s) II - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                           TGT --- AO63

          Rule-set === RULMAGIE      Alert      Rule-id  === NEWRULE6

Auto Delete          ===>                                Yes/No
Retain               ===>                                Yes/No

Escalate Direction   ===>                                Up/Down
Interval             ===>
                    ===>
                    ===>
                    ===>
                    ===>
                    ===>
Disposition          ===>                                Keep/Delete

Exec                ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

The ALERT will not use any of the features available on this panel.

Step 12 Press **Enter**; the Rule Processor Detail Control panel is redisplayed (Figure 7-45 on page 7-45).

Figure 7-45 Triggering a Rule with Variables: Rule Processor Detail Control Panel (Example 2)

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
                                TGT --- A063
                                TIME --- 16:09:31
                                DATE --- 01/02/23

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria          A1 - Action Specification
    SV - Variable Dependencies       AA - Alert Actions(s) I
                                    AD - Alert Actions(s) II

Rule ID      ==> NEWRULE6
Event Type   ==> TIME      Type of event ( ? for list)
Initial Mode ==> ENABLED   (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>           (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>           (Interval length, 1-99999 seconds)
then status  ==>           (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==>           Function      ==>           Code   ==>
Author       ==> BAOMXY2   Description   ==>
Last Modified by      on      at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 13 Press END to apply changes.

The Rule Set Overview panel is displayed.

Step 14 Repeat Step 14 on page 7-10 and Step 15 on page 7-11 to complete saving the Rule NEWRULE6 to Rule Set RULMAGIE.

Using the Rules

To properly use the two Rules created in these examples, NEWRULE5 should come before NEWRULE6 in the Rule Set. In other words, NEWRULE6 should follow immediately after NEWRULE5.

Set the automation strategy of the Rule Set to **FIRST**, which means that events are evaluated through the Rule Set and only the first Rule that matches with an event will be fired. Once the Rule fires, the event is handled and subsequent Rules are not compared against the event and, therefore, will not fire.

In this example, each time IEF403I message matches NEWRULE5, the value of variable *&!a.imfjtype.&imfjnum* will increase by 1. When the value reaches 13, the NEWRULE6 will fire because the value of the *&!a.imfjtype.&imfjnum* has become greater than 12 and an ALERT will be issued.

The ALERT will call attention to the fact that a job has started more than 12 times, which might indicate that the job needs operator attention.

Creating ALERTs from Rules

The following sections describe how to create an ALERT from a Rule. The first example shows how to modify an existing ALERT to be retained across BBI-SS PAS restarts and MVS IPLs.

The second example shows how to create an ALERT whose priority can increase over user-specified periods of time.

Example 1: Creating an ALERT Retained across BBI-SS PAS Restarts and MVS IPLs

To issue an ALERT from a Rule that will be written to disk and saved across BBI-SS PAS restarts and MVS IPLs:

- Step 1** Enter the new Rule ID and the event type on the Rule Processor Detail Control panel.

Figure 7-46 Modifying an ALERT to Survive MVS IPLs: Rule Processor Detail Control Panel (Example 1)

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                           TGT --- AO63
                                                    TIME --- 08:08:08
                                                    DATE --- 01/02/22

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria          A1 - Action Specification
    SV - Variable Dependencies      AA - Alert Actions(s) I
                                    AD - Alert Actions(s) II

Rule ID      ==> NEWRULE7
Event Type   ==> ALRT      Type of event ( ? for list)
Initial Mode ==> ENABLED   (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>          (Interval length, 1-99999 seconds)
then status  ==>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==> payroll  Function      ==>          Code   ==>
Author       ==> BAOMXY2  Description   ==> Modify Payroll ALERT
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

- Step 2** Press **Enter**; the Selection Criteria - ALRT panel is displayed (Figure 7-47 on page 7-48).

- Step 3** Next, specify the event criteria that the Rule must match to cause the Rule to fire.

Figure 7-47 Modifying an ALERT to Survive MVS IPLs: Selection Criteria Panel

```

BMC Software ----- Selection Criteria - ALRT ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                           TGT --- AO63

                Rule-set === RULMAGIE                Rule-id  === NEWRULE7

Text Description:
Text ID      ===> *                                First Word of ALert
Text String (Enter Below):
*payroll*failed*

Key          ===>
Queue        ===>                                Alert Queue

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

By specifying the text in the **Text String** field as shown above, the Rule will match any event that contains the text

payroll*failed

The asterisks represent any amount of text surrounding the words *payroll* and *failed*.

- Step 4** Press **Enter**; the Variable Dependencies - ALRT panel is displayed (Figure 7-48 on page 7-49).

Figure 7-49 **Modifying an ALERT to Survive MVS IPLs: Action Specification Panel**

```

BMC Software ----- Action Specification - ALRT ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                           TGT --- A063

                Rule-set === RULMAGIE                Rule-id === NEWRULE7

Automation Actions:
Display at dest. ===> YES                Journal ===>
EXEC Name/Parms ===>
Send (TSO IDs) ===>
Cmd (Type MVS ) ===>

Set Variable      ===>                      ===>
Reword Alert      ===>

Notify            ===>                      Outboard Pager ID
Info              ===>

DOM Id            ===>                      Delete Operator Message
Issue WTO Msg     ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

- Step 6** Specify **YES** for the **Display at dest.** field to cause the message to be written to the console.
- Step 7** Press **Enter**; the Alert Action(s) I - ALRT panel is displayed (Figure 7-50 on page 7-51).

Figure 7-50 Modifying an ALERT to Survive MVS IPLs: Alert Action(s) I Panel

```

BMC Software ----- Alert Action(s) I - ALRT ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                     TGT --- AO63
          Rule-set == RULMAGIE                    Rule-id == NEWRULE7
Function ==> modify                               (ADD, DELETE, DELETEQ, MODIFY)
Key      ==>
Text     ==>

Queues   ==>                                     Alert Queue Name(s)
Priority ==>                                     (CRIT,MAJ,MIN,WARN,INFO,CLEAR)
Color    ==>                                     RED,PINK,YEL,DKBL,LTBL,GRE,WHI
PCMD     ==>

System   ==>                                     Return to target after PCMD
Exec     ==>                                     Follow-up EXEC
Help     ==>                                     Associated HELP Panel
Targets  ==>                                     Target System
Udata    ==>                                     User Data
Origin   ==>                                     Origin
User     ==>                                     Userid
Alarm    ==>                                     Sound Alarm (YES/NO)
Publish  ==>                                     Messages (ADD/REPLACE/NO)

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 8 Specify **MODIFY** for the **Function** field.

The **MODIFY** function allows you to modify an **ALRT** event. In this example, the Rule will modify the original **ALRT** event to be retained and saved to disk. An **ALERT** that is retained will survive a **BBI-SS PAS** restart and **MVS IPLs**. When the system is restarted, the **ALERT** will still be recovered.

Step 9 Press **Enter**; the Alert Action(s) II - **ALRT** panel is displayed (Figure 7-51 on page 7-52).

Figure 7-51 Modifying an ALERT to Survive MVS IPLs: Alert Action(s) II Panel

```

BMC Software ----- Alert Action(s) II - ALRT ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                           TGT --- AO63

                Rule-set === RULMAGIE      Alert      Rule-id === NEWRULE7

Retain                ===> Yes                                Yes/No
Escalate Direction    ===>                                     Up/Down
Interval              ===>
                    ===>
                    ===>
                    ===>
                    ===>
Disposition           ===>                                     Keep/Delete

Exec                  ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 10 To specify that the ALERT will be saved to survive BBI-SS PAS restarts and MVS IPLs, enter **YES** in the **Retain** field.

Step 11 Press **Enter**; the Rule Processor Detail Control panel is displayed (Figure 7-52 on page 7-53).

**Figure 7-52 Modifying an ALERT to Survive MVS IPLs: Rule Processor
Detail Control Panel (Example 2)**

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
                                         TGT --- A063
                                         TIME --- 16:09:31
                                         DATE --- 01/02/23

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria           A1 - Action Specification
    SV - Variable Dependencies        AA - Alert Actions(s) I
                                         AD - Alert Actions(s) II

Rule ID      ==> NEWRULE6
Event Type   ==> TIME      Type of event ( ? for list)
Initial Mode ==> ENABLED   (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>           (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>           (Interval length, 1-99999 seconds)
then status  ==>           (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==>           Function      ==>           Code   ==>
Author       ==> BAOMXY2   Description   ==>
Last Modified by      on      at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 12 Press **END** to apply changes.

The Rule Set Overview panel is displayed.

Step 13 Repeat Step 14 on page 7-10 and Step 15 on page 7-11 to complete saving the Rule NEWRULE7 to Rule Set RULMAGIE.

Example 2: Creating an ALERT Whose Priority Increases Over Time

You can create an ALERT from a Rule whose priority will increase or decrease over user-specified periods of time. When the ALERT reaches its final priority level, you can specify that the ALERT is kept or discarded. You also can specify that an EXEC is issued.

To issue an ALERT whose priority will increase over time from a Rule:

- Step 1** Enter the new Rule ID and the event type on the Rule Processor Detail Control panel.

Figure 7-53 Escalating an ALERT: Rule Processor Detail Control Panel (Example 1)

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
                                                    TGT --- AO63
                                                    TIME --- 08:14:14
                                                    DATE --- 01/02/22

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria                A1 - Action Specification
    SV - Variable Dependencies            AA - Alert Actions(s) I
                                         AD - Alert Actions(s) II

Rule ID      ==> NEWRULE8
Event Type   ==> MSG      Type of event ( ? for list)
Initial Mode ==> ENABLED  (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>          (Interval length, 1-99999 seconds)
then status  ==>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==> MVS      Function      ==>          Code ==>
Author       ==> BAOMXY2  Description   ==> Create ALERT for Enqueue
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

- Step 2** Press **Enter**; the Selection Criteria - MSG panel is displayed (Figure 7-54 on page 7-55).

Next specify the event criteria that the Rule must match to cause the Rule to fire.

Figure 7-54 Escalating an ALERT: Selection Criteria Panel

```

BMC Software ----- Selection Criteria - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                           TGT --- AO63

                Rule-set == RULMAGIE                Rule-id == NEWRULE8

Text Description:
Text ID      ==> IEF863I                               Ignore leading plus: Y
Text String (Enter Below):

Issuer Identification:
Job name     ==>                                         Name of issuer
Type        ==>                                         (JOB, STC, or TSO)
Jobclass    ==>                                         Job class of issuer
Acct Info   ==>                                         Job accounting information
RACF User   ==>                                         RACF Userid
RACF Group  ==>                                         RACF Group name
Route Codes ==>
Desc Codes  ==>
Console ID  ==>                                         Destination Console
Console Name ==>                                         Destination Console Name

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 3 Enter **IEF863I** in the **Text-ID** field.

Step 4 Press **Enter**; the Variable Dependencies - MSG panel is displayed (Figure 7-55 on page 7-56).

[illegible]

Figure 7-56 Escalating an ALERT: Action Specification Panel

```

BMC Software ----- Action Specification - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                           TGT --- AO63
          Rule-set === RULMAGIE                      Rule-id === NEWRULE8
Display at dest. ==> NO          Journal ==>          SYSLOG Display ==>
EXEC Name/Parms ==>
Send (TSO IDs)   ==>
Cmd (Type MVS ) ==>

Set Variable     ==>                                ==>
Reword Msg       ==>

Notify          ==>                                Outboard Pager ID
Info            ==>

Console ID      ==>                                Destination Console ID
Console Name    ==>                                Dest. Console ID Name
Route codes     ==>
Descriptor codes ==>
Update Rout/Desc Codes ==>                          (ADD/REPL)
DOM Id          ==>                                Delete Operator Message
Issue WTO Msg   ==>

DOM Message     ==>                                (Yes/No)
Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 6 Specify **NO** for **Display at dest.**, and the IEF863I message will be suppressed from the console

Step 7 Press **Enter**; the Alert Action(s) I - MSG panel is displayed (Figure 7-57 on page 7-58).

Figure 7-57 Escalating an ALERT: Alert Action(s) I Panel

BMC Software ----- Alert Action(s) I - MSG ----- MAINVIEW AutoOPERATOR	
COMMAND ==>	TGT --- AO63
Rule-set ==> RULMAGIE	Rule-id ==> NEWRULE8
Function ==> ADD	(ADD, DELETE, DELETEQ)
Key ==> &IMFDAY&WORD5&IMFRLFRD	
Text ==> &IMFTEXT	
Queues ==> MAIN	Alert Queue Name(s)
Priority ==> INFORMATIONAL	(CRIT, MAJ, MIN, WARN, INFO, CLEAR)
Color ==>	RED, PINK, YEL, DKBL, LTBL, GRE, WHI
PCMD ==>	
System ==>	Return to target after PCMD
Exec ==>	Follow-up EXEC
Help ==>	Associated HELP Panel
Targets ==>	Target System
Udata ==>	User Data
Origin ==>	Origin
User ==>	Userid
Alarm ==>	Sound Alarm (YES/NO)
Publish ==>	Messages (ADD/REPLACE/NO)
Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes	

Step 8 To issue an ALERT from a Rule, do the following:

- Use the ADD function for the **Function** field.
- Every ALERT must have a unique ALERT key associated with it. ALERTs with the same key override each other.

To create a unique key, this example uses the IMFDAY, WORD5, and IMFRLFRD variables. These variables will resolve to the day of the week, the job name, and the number of times the Rule was fired. This combination ensures that the key will be unique.

- The ALERT text will resolve the actual text of the IEF863I message.
- The ALERT will belong to a queue named MAIN.
- The starting priority will be INFORMATIONAL.

The color of the ALERT defaults to green, which is the default color associated with INFORMATIONAL-level ALERTs.

Step 9 Press **Enter**; the Alert Actions II - MSG panel is displayed (Figure 7-58 on page 7-59).

Figure 7-58 Escalating an ALERT: Alert Action(s) II Panel

```

BMC Software ----- Alert Action(s) II - MSG ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                           TGT --- AO63

          Rule-set === RULMAGIE      Alert      Rule-id  === NEWRULE8

Auto Delete      ===>                               Yes/No
Retain           ===>                               Yes/No

Escalate Direction ===> up                               Up/Down
Interval         ===> 5
                  ===> 5
                  ===> 5
                  ===> 5
                  ===>
                  ===>
Disposition      ===> keep                               Keep/Delete

Exec            ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 10 To specify that the ALERT will increase in priority, specify **UP** for the **Escalate Direction** field.

You must also specify the interval, in minutes, over which the ALERT will increase.

For this example, the ALERT will begin at **INFORMATIONAL** (and remain there for five minutes); at the end of five minutes the ALERT will become a **WARNING** level ALERT and remain there for five minutes. The ALERT will then progress through **MINOR**, **MAJOR**, and finally, **CRITICAL** priorities.

When the last time interval expires, you can specify in the **Disposition** field that the ALERT is either kept in the queue or deleted. This example shows the ALERT is kept.

Step 11 Press **Enter**; the Rule Processor Detail Control panel is displayed (Figure 7-59 on page 7-60).

Figure 7-59 Escalating an ALERT: Rule Processor Detail Control Panel (Example 2)

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ===>
                                TGT --- AO63
                                TIME --- 16:09:31
                                DATE --- 01/02/23

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria          A1 - Action Specification
    SV - Variable Dependencies       AA - Alert Actions(s) I
                                    AD - Alert Actions(s) II

Rule ID      ===> NEWRULE8
Event Type   ===> TIME      Type of event ( ? for list)
Initial Mode ===> ENABLED   (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ===>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ===>          (Interval length, 1-99999 seconds)
then status  ===>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ===>          Function      ===>          Code   ===>
Author       ===> BAOMXY2  Description   ===>
Last Modified by      on      at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

Step 12 Press **END** to apply changes.

The Rule Set Overview panel is displayed.

Step 13 Repeat Step 14 on page 7-10 and Step 15 on page 7-11 to complete saving the Rule NEWRULE8 to Rule Set RULMAGIE.

Creating a VAR-Initiated Rule

The following section describes how to create a Rule that is fired when a variable in the SHARED pool is updated. VAR-initiated Rules are fired when a variable value that you specify is updated, deleted, or created.

To create a Rule that is fired when a variable is updated, follow these steps:

- Step 1** Enter the new Rule ID and the event type on the Rule Processor Detail Control panel.

Figure 7-60 Creating a VAR-Initiated Rule: Rule Processor Detail Control Panel (Example 1)

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
                                                    TGT --- AO63
                                                    TIME --- 08:34:47
                                                    DATE --- 01/02/22

The following options are displayed in sequence, or may
be selected by entering the two-character code

    S1 - Selection Criteria                A1 - Action Specification
    SV - Variable Dependencies            AA - Alert Actions(s) I
                                         AD - Alert Actions(s) II

Rule ID      ==> NEWRULE9
Event Type   ==> VAR      Type of event ( ? for list)
Initial Mode ==> ENABLED  (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>          (Interval length, 1-99999 seconds)
then status   ==>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group         ==> MVS      Function         ==>          Code ==>
Author        ==> BAOMXY2 Description       ==> variable updated
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

- Step 2** Press **Enter**; the Selection Criteria - VAR panel is displayed (Figure 7-61 on page 7-62).

- Step 3** Specify the variable name and when the Rule should fire (for example, when the variable is updated, deleted, or created).

Figure 7-61 Creating a VAR-Initiated Rule: Selection Criteria Panel

```

BMC Software ----- Selection Criteria - VAR ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63

          Rule-set === RULMAGIE          Rule-id === NEWRULE9

Variable Description: (Shared variable only)
Name          ===> myvar

Fire this Rule when:

          Variable is ===> upd                      (Created,Deleted,Upd)

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Enter the variable name in the **Name** field (in this example, the variable name is MYVAR).

Step 4 Specify the action that will fire the Rule; valid values are

- Created - The Rule will fire when MYVAR is created in the SHARED pool.
- Deleted - The Rule will fire when MYVAR is deleted from the SHARED pool.
- Upd - The Rule will fire when the value of MYVAR is updated in the SHARED pool.

In this example, the Rule will fire when the variable is updated.

Step 5 Press **Enter**; the Variable Dependencies - VAR panel is displayed (Figure 7-62 on page 7-63).

```
BMC Software ----- Variable Dependencies - VAR ----- MAINVIEW AutoOPERATOR  
COMMAND ==> TGT --- AO63
```

Variable-name	Op	Variable-Value	OR/ AND
myvar_____	eq	error_____	___
_____	__	_____	___
_____	__	_____	___
_____	__	_____	___
_____	__	_____	___
_____	__	_____	___
_____	__	_____	___
_____	__	_____	___
_____	__	_____	___
_____	__	_____	___
_____	__	_____	___
_____	__	_____	___
_____	__	_____	___

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

Step 6 Specify the value of the variable that, when matched, will trigger the Rule. In this example, when the MYVAR variable contains the value *error*, the Rule will fire.

Step 7 Press **Enter**.

The Action Specification - MSG panel is displayed (Figure 7-63 on page 7-64).

Figure 7-63 Creating a VAR-Initiated Rule: Action Specification Panel

```

BMC Software ----- Action Specification - VAR ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                           TGT --- AO63

                Rule-set === RULMAGIE                Rule-id  === NEWRULE9

Automation Actions:
Journal          ===>
EXEC Name/Parms  ===>
Send (TSO IDs)   ===> baomxy2
Cmd (Type MVS )  ===>

Set Variable     ===>                                ===>

Notify           ===>                                Outboard Pager ID
Info             ===>

DOM Id           ===>                                Delete Operator Message
Issue WTO Msg    ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

- Step 8** Specify the action that the Rule takes when it fires. In this example, the only action taken is TSO user BAOMXY1 will be notified when the Rules fires.
- Step 9** Press **Enter**; the Alert Action(s) I - VAR panel is displayed (Figure 7-64 on page 7-65).

Figure 7-64 Creating a VAR-Initiated Rule: Alert Action(s) I Panel

```

BMC Software ----- Alert Action(s) I - VAR ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63

      Rule-set === RULMAGIE          Rule-id  === NEWRULE9
Function ===>                        (ADD, DELETE, DELETEQ)
Key      ===>
Text     ===>

Queues   ===>                        Alert Queue Name(s)
Priority ===>                        (CRIT,MAJ,MIN,WARN,INFO,CLEAR)
Color    ===>                        RED,PINK,YEL,DKBL,LTBL,GRE,WHI
PCMD     ===>

System   ===>                        Return to target after PCMD
Exec     ===>                        Follow-up EXEC
Help     ===>                        Associated HELP Panel
Targets  ===>                        Target System
Udata    ===>                        User Data
Origin   ===>                        Origin
User     ===>                        Userid
Alarm    ===>                        Sound Alarm (YES/NO)
Publish  ===>                        Messages (ADD/REPLACE/NO)

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

Step 10 This Rule will not issue an ALERT; press **Enter** and the Alert Action(s) II - VAR panel is displayed (Figure 7-65).

Figure 7-65 Creating a VAR-Initiated Rule: Alert Action(s) II Panel

```

BMC Software ----- Alert Action(s) II - VAR ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- AO63

      Rule-set === RULMAGIE    Alert    Rule-id  === NEWRULE9

Retain          ===>                        Yes/No

Escalate Direction ===>                        Up/Down
Interval        ===>
                ===>
                ===>
                ===>
                ===>
                ===>
Disposition     ===>                        Keep/Delete

Exec           ===>

Press ENTER to continue, END return to Detail Control, CANCEL to cancel changes

```

- Step 11** Press **Enter**; the Rule Processor Detail Control panel is redisplayed (Figure 7-66).

Figure 7-66 Creating a VAR-Initiated Rule: Rule Processor Detail Control Panel (Example 2)

```

BMC Software ----- Rule Processor Detail Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
TGT --- AO63
TIME --- 16:09:31
DATE --- 01/02/23

The following options are displayed in sequence, or may
be selected by entering the two-character code

S1 - Selection Criteria          A1 - Action Specification
SV - Variable Dependencies      AA - Alert Actions(s) I
                                AD - Alert Actions(s) II

Rule ID      ==> NEWRULE9
Event Type   ==> VAR      Type of event ( ? for list)
Initial Mode ==> ENABLED  (ENABLED/DISABLED/TEST)

Criteria match rate threshold:
If matched   ==>          (Maximum # times matched within INTERVAL, 0-100)
in seconds   ==>          (Interval length, 1-99999 seconds)
then status  ==>          (SUSPEND, DISABLE, NOACTION)

Application information:
Group        ==>          Function      ==>          Code   ==>
Author       ==> BAOMXY2  Description   ==>
Last Modified by      on          at

Press ENTER to continue, END to apply changes, CANCEL to cancel changes

```

- Step 12** Press **END** to apply changes.

The Rule Set Overview panel is displayed.

- Step 13** Repeat Step 14 on page 7-10 and Step 15 on page 7-11 to complete saving the Rule NEWRULE9 to Rule Set RULMAGIE.

Chapter 8 Creating More Powerful Rules

This chapter describes how to use

- pattern matching
- variables

to create more powerful Rules in the Rule Processor.

Introduction

When you specify data on any of the Selection Criteria or Action Specification panels (except where noted), you can specify

- constant values (or literals)
- patterns of strings of data
- variables
- combinations of all of the above

Specifying only literals when you create a Rule might limit the Rule applicability to only very specific situations. However, by using variables, combinations of literals and variables, or pattern matching, you can create more powerful and flexible Rules that apply to more general situations. By using these techniques, you can accomplish an automation task with fewer EXECs and more effective Rules.

The following two sections describe how to use variables and pattern matching in Rules:

- “Using Pattern Matching on Selection Criteria Panels” on page 8-2
- “Using Variables in the Rule Processor” on page 8-6

Using Pattern Matching on Selection Criteria Panels

On the selection criteria panels for all events, you can use pattern matching. The following sections describe how.

You can use wildcard characters on most of the fields in the various Selection Criteria panels. The wildcard characters are

- the + sign
stands for 1 position that can be a blank or any character
- the * sign
stands for any number (including zero) of nonblank characters
- the Not sign (¬)
stands for a negative logic test

For example, ¬ABCD matches with everything *except* ABCD.

- the single quotation mark (‘)
acts as a toggle switch and thus cannot be coded in the Text String or Variable dependencies panel

The first single quotation mark turns pattern matching off, the next turns it on again. Pattern matching must be used in place of single quotation marks.

For example, *IS A* or *TEST MESSAGE* matches THIS 'IS A' TEST MESSAGE.

If a + or * is embedded within the pattern string and the pattern string is specified within quotation marks, the + or * values are recognized as part of the string. For example, 'ABC+D' matches only with ABC+D.

Use these wildcard characters when you want to create a pattern for values in your selection criteria. For example, assuming all error messages begin with ERR, you might want to write a Rule that fires for all error messages.

Instead of creating a Rule for every error message, you can specify a pattern of characters that the Text-ID must match: for example **Text-ID====> ERR***. This pattern specifies that the Rule should be fired every time a message that begins with ERR is issued.

Examples of Using Pattern Matching

This section describes how you might use pattern matching in the **Text ID** and **Text String** fields.

Example 1

Select a message; for example:

DFH3461I ABCD SNFL 8:38:41 NODE RS8014 SESSION STARTED

Suppose you want a Rule to fire only for the message DFH346I that contains ABCD anywhere in the text. Enter the selection criteria on the Rule Selection Criteria panel:

Text Description:

Text-ID ==> DFH3461I First word of event

Text String ==> (Enter Below):

ABCD

Example 2

In this example:

Text ID ==> INIT+++ First word of event

Text String ==> (Enter Below): Text string (incl.
Text-ID)

*INACTIVE*MISSION*

any message whose first word

- is 7 characters long and starts with INIT
- has three positions containing characters (not blanks)
- has the word INACTIVE followed anywhere in the character string by the word MISSION

is selected.

Example 3

In this example:

```
Text ID      ==> INIT+++           First word of event
Text String  ==> (Enter Below):     Text string (incl.
Text-ID)
*INACTIVE*MISSION
```

any message whose first word

- starts with INIT
- has three positions containing characters (not blanks)
- has the word INACTIVE followed *at the end* of the character string by the word MISSION

is selected.

Note that this text string definition matches only if the message ends with MISSION and *no other characters or blanks follow*. If the message contains any characters or blanks after the N, you must code the text string with an asterisk after the word MISSION as in Example 2.

Example 4

For better performance, use wildcard characters discriminatively. For example:

```
Text-ID      ==> *
Text String  ==> (Enter Below)
*STARTED*
```

searches *every* message for the word STARTED. It would be more efficient if you did the following search instead:

```
Text-ID      ==> IM9161I
Text String  ==> (Enter Below)
*STARTED*
```

which searches only IM9161I messages for the word STARTED.

Example 5

The Rule Processor treats each word of the Accounting Information (**Acct Info**) field separately. Words of accounting information are denoted by commas.

For example, if the job card has the following accounting information:

(3912 , PROD , AAO)

the Rule Processor would process 3912, PROD, and AAO separately.

For the above example, pattern matching could be specified as

Table 8-1 Pattern Matching for Acct Info Field

Character String	Pattern	Results
(3912,PROD,AAO)	*	Match
(3912,PROD,AAO)	*, PROD	Match
(3912,PROD,AAO)	*, PROD, *	Match
(3912,PROD,AAO)	3912, *,AAO	Match
(3912,PROD,AAO)	3*,P*,A*	Match
(3912,PROD,AAO)	PROD	No Match

Table 8-2 shows some examples of pattern matches.

Table 8-2 Example of Pattern Matches

Character String	Pattern	Results
ABCDEF	ABC++F	Match
ABCDEF	ABC+F	No match
ABCDEF	A*	Match
ABCDEF	*D+F	Match
ABCDEF	A+C*	Match
ABCDEF	A*F	Match
ABCDEF	A*+F	Match
ABCDEF	A+FF	No match
ABCDEF	A*BCDEF	Match
ABCDEF	A+B*	No match
ABCDEF	'A*BCDEF'	No match
ABCDEF	¬XYZ	Match
ABCDEF	¬*BCD*	No match

Additional Notes

The single quotation mark is used as a toggle switch for pattern matching and cannot be coded in the **Text String** field of the Selection Criteria panel or Variable Dependencies panel. Pattern matching must be used in place of single quotation marks.

For example, on the Variable Dependencies panel, coding

```
WORD3 EQ +IS MESSAGE
```

will result in a match with

```
IJK5868 THIS 'IS A' TEST MESSAGE
```

In the **Text String** field, coding

```
*IS A*
```

or

```
*TEST MESSAGE*
```

also results in a match with

```
IJK5868 THIS 'IS A' TEST MESSAGE
```

Debugging

For debugging purposes, to determine if the match is successful, route the message to a specific location, such as the Journal log or your TSO user ID, for verification of the pattern selection criteria.

Using Variables in the Rule Processor

The following sections describe how to use variables in the Rule Processor application.

Variables may be used in most fields of the Selection Criteria panels, the Action Specification panels, and the Variable Dependencies panel. The definitions for the individual fields include information about variable usage.

Defining Variables

The Rule Processor application treats any character string that begins with an ampersand sign (&) as a variable. Variable names can be up to 32 characters long, excluding the ampersand sign (&). The variable values can be up to 255 characters long.

Two types of variables can be used in Rules:

- SHARED variables from the BBI-SS PAS SHARED variable pool
- EVENT variables created by the Rule Processor application; they exist for duration of the event

EVENT variables consist of

- WORDxxx variables, where xxx represents a number (for example, &WORD4 represents the fourth word of the message text)
- MAINVIEW AutoOPERATOR-supplied variables

See Table 8-3 on page 8-16 for a list of EVENT variables.

Resolving Variables

When resolving the contents of variables:

- The variable names and the variable values are always converted to uppercase.
- Conversion operations are performed.

If the variables contain numeric values, conversion operations are performed automatically. For example, if you have two variables where &ABC=5 and &DEF=0005, these both equal 5.

Variable values can also contain combinations of numerics and characters. When numerics and characters are combined, the conversion operation is a little different. For example, if you have two variables where &ABC=XYZ0005 and &DEF=XYZ5, these values are not equal.

- The following search order is used:
 - A. BBI-SS PAS SHARED variables
 - B. EVENT variables (WORDxxx variables and MAINVIEW AutoOPERATOR-supplied variables)

Variables that are not found result in a null value (zero length).

For example, if the SHARED variable pool contains a variable named &WORD1, the value from the SHARED pool is used instead of the actual first word of the event text.

When the Rule Processor resolves the contents of variables, the Rule Processor accepts two styles of variable specifications: simple variables (formerly referred to as CLIST-style) and compound variables.

Important
The compound variables are resolved similar to REXX variables but <i>they are not REXX stem variables</i> and do not behave like REXX stem variables (do not refer to any REXX manuals for information about the behavior of MAINVIEW AutoOPERATOR compound variables).

The following sections describe these two types of variables.

Simple Variables

When an ampersand sign (&) prefixes text in a field in the Rule Processor fields, it denotes a simple variable name. The end of a variable name is designated by one of the following symbols:

Blank

Period (.)

Comma (,)

Ampersand (&)

Apostrophe (')

Hyphen (-)

Asterisk (*)

Plus sign (+)

Forward slash (/)

Backslash (\)

Colon (:

Example 1

When

variable &MSGID contains the characters IEF1234I

variable &TEST contains the characters ABCD

the combination

&MSGID.&TEST

is resolved as two separate variables:

IEF1234IABCD

Compound Variables

When an ampersand sign (&) prefixes text in a field in the Rule Processor fields, it denotes a simple variable name. If the ampersand sign is directly followed by an exclamation mark (!) and if there are periods in the variable name, the Rule Processor resolves the contents of the compound variable differently.

The first node of a compound variable precedes the first period and is called the stem. For example, in the variable &!ABC.MYNAME, the stem is ABC.

The stem of a compound variable is not resolved to a value and **two passes** are used to resolve the variable.

Example 2

In another example, suppose you have the following three variables and values:

```
ABC = FIRST
MYNAME = SECOND
ABC.SECOND = THIRD
```

The Rule Processor resolves the variable

&!ABC.MYNAME

as THIRD.

Variable resolution for this compound variable occurs in this sequence:

1. ABC is the stem and is not resolved.
2. In the first pass, the variable following the stem is resolved and MYNAME becomes SECOND.
3. After the first pass, the variable value is now ABC.SECOND.
4. In the second pass, the variable ABC.SECOND is resolved to THIRD.

Therefore, &!ABC.MYNAME is resolved by the Rule Processor to THIRD.

Note: The exclamation mark (!) might have a different representation when used on international keyboards. As a substitute, use the equivalent symbol for the hexadecimal value X'5A'.

The end of a variable is designated by one of the following:

Blank

Comma (,)

Ampersand (&)

Apostrophe (')

Hyphen (-)

Asterisk (*)

Plus sign (+)

Forward slash (/)

Backslash (\)

Colon (:)

If the Rule Processor cannot find a value for the variable, it is resolved as a null value. For example, if the Rule Processor cannot find a value for variable `&!ABC`, the Rule Processor assumes it is a null value.

For compound variables, if the variable `&!CICS.SYSA` does not have a value, the Rule Processor also assumes it is a null value.

In another example, if

```
&!SHIFT1.CICSTAT = SCHEDULED  
CICSTAT = not defined
```

The following combination

```
&!SHIFT1.CICSTAT
```

is resolved as

```
SCHEDULED
```

Using Variables in Rule Processor Application Fields

To use simple variables in the Rule Processor application fields, enter the variable name in the field prefixed with an ampersand (&). On the Variable Dependencies panel, you do not have to prefix the variable name with an ampersand for simple variables.

To use compound variables, enter the variable name in the field prefixed with an ampersand and an exclamation mark (&!). On the Variable Dependencies panel, you must still prefix the variable name with an ampersand and exclamation mark (&!) for compound variables.

The only exception to these two rules is for the **Set Variable** field. In this field, you do not need to use the special characters for either simple or compound variables since any value entered in this field is treated as a variable.

Setting Variables

On the Action Specification panel for all event types, you can use the field

Set Variable	====>	====>
--------------	-------	-------

to set a variable to a value.

For simple variables, enter the variable name in the first field and the value in the second field. For example:

Set Variable	====>DAYOFWEEK	====>MONDAY
--------------	----------------	-------------

As a result, the SHARED variable **DAYOFWEEK** has a value of **MONDAY**.

For a variable with more than one node, separate the node names with an extra period:

Set Variable	====>ABC&JOBNAME..&DAY.	====>PRINTIT
--------------	-------------------------	--------------

As a result, if **JOBNAME** is a variable with a value of **MVSJOB** and **DAY** is a variable with a value of **SUN**, the resulting SHARED variable named **ABCMVSJOB.SUN** has a value of **PRINTIT**.

Variable Modifiers

By appending a modifier to the end of a variable, it is possible to perform certain operations on its contents before the variable is evaluated. Currently, two operations may be performed: *substringing* and *trimming*.

Substringing and Trimming techniques further increase the power of a Rule and allow even more tasks to be accomplished. These operations are valid for both simple variables and compound variables.

The following sections describe

- “Variable Substringing” on page 8-13
- “Variable Trimming” on page 8-15

Variable Substringing

To access only a part (a substring) of a variable, specify a starting position and an optional length of the substring. Append a colon (:) to the end of the variable name followed by a numeric designating the base position. Positions start at 1 (not zero) and cannot be longer than the length of the variable.

Optionally, another colon may follow a substring specification that can designate the total length of the character string to evaluate.

Defaults

The defaults are 1 for a substring starting position and 255 for the variable length. If a substring specification extends past the end of a variable, only the portions that could properly be evaluated are returned.

Invalid Specifications

If a substring specification cannot be properly evaluated because of an invalid specification, it will be evaluated to the extent that specifications are valid.

Important Restriction
Starting position and length values must be specified explicitly. You cannot use variables to specify the starting position and the length of the substring. You cannot nest substring statements.

Examples

For the following examples, assume the variable ABC contains the character string **THIS IS A TEST**.

Example 1

By specifying
&ABC:11
the string is resolved as

TEST

Example 2

The string
&ABC:1:4
is resolved as

THIS

Example 3

The string
&ABC:11:38
still returns the string

TEST

Example 4

The string
&ABC:6:NOT
is resolved as
IS A TEST:NOT

This example shows that you can add more characters that are appended to the value returned from the substringing operation.

Variable Trimming

Variable trimming means removing leading and trailing blanks from a variable's contents. Use trimming by appending a slash (/) to the end of a specified variable name. The slash must follow any substring specifications if both are used together.

For example, suppose you want to minimize the length of an ALERT text so it fits on a single line. You want to eliminate the blanks that are padded to variables &IMFOJOB, &IMFJCLAS, and &WORD4. The result is

```
JOB &IMFOJOB/ IN CLASS &IMFJCLAS HAS ABENDED WITH CODE
&WORD4/
```

Trimming can be a useful tool for instring matches that occur when a particular string is contained in another string.

Assume that you want to find out whether the current job is one of 20 jobs whose names are contained in a character string, one following the other and delimited by a blank. This variable is called &TARGETJOB and bears the contents

```
JOB1 JOB2 PRODJOB TESTJOB . . . .
```

The current job name is contained in the variable &IMFOJOB (which is always 8 characters long and padded with blanks). For this example, assume the contents of IMFOJOB is JOB2 followed by 4 blanks. By specifying

&TARGETJOB EQ *&IMFOJOB/*

a match can be determined.

If the trim indicator is omitted, the expression would have evaluated as false because the Rule Processor will try to find the characters JOB2 followed by 4 blanks in the target string.

Note: The asterisks in this example are examples of using pattern matching. Refer to “Using Pattern Matching on Selection Criteria Panels” on page 8-2 for information about pattern matching.

List of MAINVIEW AutoOPERATOR-Supplied EVENT Variables

EVENT variables are variables that are used by the Rule Processor application and exist for the duration of the event.

EVENT variables consist of

- MAINVIEW AutoOPERATOR-supplied variables
- WORDxxx variables, where xxx represents a number (for example, &WORD4)

These variables may also be available for use by MAINVIEW AutoOPERATOR EXECs. For more information about variables and MAINVIEW AutoOPERATOR EXECs, refer to the variables discussion in the *MAINVIEW AutoOPERATOR Advanced Automation Guide*.

When creating Rules for the ALRT event type, additional variables are available. Refer to Table 6-6 on page 6-29 for a list.

The following table shows all the EVENT variables supplied by MAINVIEW AutoOPERATOR.

Table 8-3 MAINVIEW AutoOPERATOR-Supplied EVENT Variables (Part 1 of 6)

Variable Name	Description
&IMFACCTG	all accounting fields for a particular event The accounting field values are separated by blanks. Maximum length is 142.
&IMFALID	alarm ID associated with an alarm created by MAINVIEW Alarm Manager.
&IMFALPRI	user-assigned priority of the alarm Possible values are <ol style="list-style-type: none"> 1 Critical 2 Major 3 Minor 4 Warning 5 Informational 6 Clearing
&IMFALQID	name of the queue to which the alarm was assigned
&IMFALRM	either Y (sound an alarm) or N (do not an sound alarm)

Table 8-3 MAINVIEW AutoOPERATOR-Supplied EVENT Variables (Part 2 of 6)

Variable Name	Description								
&IMFCLOCK	<p>number derived from the first word of the S/390 Time-of-Day clock The increment value is approximately once every 1.05 seconds.</p> <p>Each Rule that fires has its own copy of the &IMFCLOCK variable, but the variable is not passed to Rule-initiated EXECs.</p> <p>You can use this variable to help construct names and values that are unique for the life of this IPL. For example, you can combine the IMFCLOCK and IMFRLID variables to create a unique variable to create a unique ALERT key. On the Alert Action(s) I panel in the Rules Processor, specify</p> <p>Key ==> &IMFRLID::&IMFCLOCK</p>								
&IMFCNTXT	name of the context of the alarm								
&IMFCONID	console ID of the message, if message was issued for a specific console								
&IMFCONNM	<p>console name to which the WTO was issued Valid only for MVS SP4 and above.</p> <p>&IMFCONNM may be used to identify the origin of an MVS command. The contents of the variable (by origin) are</p> <table> <tr> <td>Origin</td><td>IMFCONNM Value</td></tr> <tr> <td>Rule</td><td>Internal</td></tr> <tr> <td>SDSF</td><td>TSO user ID that issued the command</td></tr> <tr> <td>Console</td><td>Console Name where the command was issued</td></tr> </table>	Origin	IMFCONNM Value	Rule	Internal	SDSF	TSO user ID that issued the command	Console	Console Name where the command was issued
Origin	IMFCONNM Value								
Rule	Internal								
SDSF	TSO user ID that issued the command								
Console	Console Name where the command was issued								
&IMFDAY	three-character day of the week: MON, TUE, WED, THU, FRI, SAT, SUN								
&IMFDNAM	DDNAME specified by the user to generate an external events (EXT event type) EXT events are generated by using the SUBSYS= parameter on a DD statement in JCL. Refer to "EXT Events" on page 4-13 for more information about EXT events.								
&IMFDOMID	DOM ID associated with a WTO that caused a Rule to fire								
&IMFEVFRD	number of Rules that have fired for a specific event								

Table 8-3 MAINVIEW AutoOPERATOR-Supplied EVENT Variables (Part 3 of 6)

Variable Name	Description
&IMFETYPE	<p>event type that caused the Rule to fire</p> <p>If a Rule schedules an EXEC, IMFETYPE contains the value from the Rule that scheduled the EXEC. Possible values for IMFETYPE are</p> <ul style="list-style-type: none"> • MSG • CICS • CMD • JRNL • IMS • ALRT • DB2 • TIME • ALRM • EXT • VAR • MQS • JES3 <p>For more information about these event types, refer to “Describing Events” on page 4-1.</p>
&IMFGROUP	<p>RACF group ID for the address space that issued the event</p> <p>The group ID is taken from the GROUP= parameter on the job card.</p>
&IMFJCLAS	job class from the job card of the batch job that has generated the message.
&IMFJNUM	<p>JES job number of the job, STC, or TSU that issued the message</p> <p>It is a fixed length five-digit or a variable length value depending on the setting of the IMFJNUM option in member AAOPRMxx. IMFJNUM can also contain blanks (one or five characters as appropriate) for WTOs that are issued by non-JES tasks, such as a STC started under MSTR.</p> <p>When IMFJNUM=5 (the default setting) and the job number is greater than 99,999 (for example, T0100000, S0999999, etc.) are encountered, IMFJNUM will be null (zero length).</p>
&IMFJTYPE	<p>type of job issuing message:</p> <p>J Batch Job</p> <p>T TSO User</p> <p>S Started Task</p>
&IMFLPROD	name of the product associated with the alarm
&IMFLTYPE	literal value associated with the alarm; possible values can be START or STOP
&IMFLUSER	user-specified user ID associated with the alarm
&IMFMPFAU	YES, NO, or an 8-character token set by the user in SYS1.PARMLIB
&IMFMPFSP	either YES or NO

Table 8-3 MAINVIEW AutoOPERATOR-Supplied EVENT Variables (Part 4 of 6)

Variable Name	Description																										
&IMFMSTYP	<p>two-character variable for the message type</p> <p>This variable is only for the CMD and MSG event types. Valid values for the first character can be</p> <p>N A regular WTO</p> <p>W A regular WTOR</p> <p>M A major line of a multi-line WTO (MLWTO)</p> <p>Valid values for the second character can be</p> <p>C Command</p> <p>R Command response</p>																										
&IMFOASID	<p>originating Address Space ID (ASID) of the message</p> <p>For IMFEOM, it is set to the ASID that is being terminated.</p>																										
&IMFODATE	date when the message was issued																										
&IMFOJOB	<p>(WTOs) job or Started Task that issued the WTO</p> <p>(CICS messages) CICS region name that the subsystem issued the message for, which is useful when monitoring multiple CICS regions with one BBI-SS PAS.</p> <p>(DB2 messages) DB2 region name that the subsystem issued the message for, which is useful when monitoring multiple DB2 regions with one BBI-SS PAS.</p> <p>(IMS messages)</p> <ul style="list-style-type: none"> • IMS job name for IMS MTO messages • IMS job name for commands (and their responses) entered from MAINVIEW AutoOPERATOR • originating LTERM for commands (and their responses) entered from an IMS LTERM <p>(Journal messages issued by an EXEC) user ID of the person who scheduled the EXEC</p>																										
&IMFOQID	CICS transient data queue name if source of message is CICSTD																										
&IMFORGN	<table> <tr> <th>Type</th><th>Description</th></tr> <tr> <td>MSG</td><td>job name of issuer</td></tr> <tr> <td>CMD</td><td>job name of issuer</td></tr> <tr> <td>ALRT</td><td>MAINVIEW AutoOPERATOR job name issuing the ALERT</td></tr> <tr> <td>DB2</td><td>DB2 address space job name</td></tr> <tr> <td>CICS</td><td>CICS address space job name</td></tr> <tr> <td>IMS MSG</td><td>IMS region name</td></tr> <tr> <td>IMS CMD</td><td>IMS LTERM name</td></tr> <tr> <td>JES3</td><td>JES3 SYSID name</td></tr> <tr> <td>JRNL</td><td>job name on whose behalf the Journal message was issued</td></tr> <tr> <td>TIME</td><td>MAINVIEW AutoOPERATOR job name</td></tr> <tr> <td>EXT</td><td>job name of issuer</td></tr> <tr> <td>ALRM</td><td>name of issuer</td></tr> </table>	Type	Description	MSG	job name of issuer	CMD	job name of issuer	ALRT	MAINVIEW AutoOPERATOR job name issuing the ALERT	DB2	DB2 address space job name	CICS	CICS address space job name	IMS MSG	IMS region name	IMS CMD	IMS LTERM name	JES3	JES3 SYSID name	JRNL	job name on whose behalf the Journal message was issued	TIME	MAINVIEW AutoOPERATOR job name	EXT	job name of issuer	ALRM	name of issuer
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EXT	job name of issuer																										
ALRM	name of issuer																										
&IMFORGSS	BBI Subsystem ID of the BBI-SS PAS																										

Table 8-3 MAINVIEW AutoOPERATOR-Supplied EVENT Variables (Part 5 of 6)

Variable Name	Description																										
&IMFOTIME	time when the message was issued Valid only for messages captured through the Rule Processor. The format is HH.MM.SS for MSG event types. For all other event types, the format is HH:MM:SS																										
&IMFPCMD	PCMD associated with the alarm																										
&IMFREPLY	Reply ID of the WTOR message																										
&IMFRLFRD	number of times a Rule was fired																										
&IMFRLID	Rule identifier																										
&IMFRLMAT	number of times the Rules search criteria was matched																										
&IMFRLSET	name of the Rule Set the Rule belongs to																										
&IMFRLSTA	Rule status: TEST Indicates the Rule is in a TEST state. ACTIVE Indicates the Rule is in ACTIVE state.																										
&IMFRUSER	user ID from the USER= parameter on the job card.																										
&IMFSCOPE	name of the scope associated with the alarm																										
&IMFSTEP	contains the step name that triggered the Rule																										
&IMFSTOKN	Address Space STOKEN This name is unique for the life of the IPL.																										
&IMFSYSID	<table> <tr> <th>Type</th><th>Description</th></tr> <tr> <td>MSG</td><td>job name of issuer</td></tr> <tr> <td>CMD</td><td>job name of issuer</td></tr> <tr> <td>ALRT</td><td>MAINVIEW AutoOPERATOR job name issuing the ALERT</td></tr> <tr> <td>DB2</td><td>DB2 address space job name</td></tr> <tr> <td>CICS</td><td>CICS address space job name</td></tr> <tr> <td>IMS MSG</td><td>IMS region name</td></tr> <tr> <td>IMS CMD</td><td>IMS LTERM name</td></tr> <tr> <td>JES3</td><td>JES3 SYSID name</td></tr> <tr> <td>JRNL</td><td>job name on whose behalf the Journal message was issued</td></tr> <tr> <td>TIME</td><td>MAINVIEW AutoOPERATOR job name</td></tr> <tr> <td>EXT</td><td>job name of issuer</td></tr> <tr> <td>ALRM</td><td>name of issuer</td></tr> </table>	Type	Description	MSG	job name of issuer	CMD	job name of issuer	ALRT	MAINVIEW AutoOPERATOR job name issuing the ALERT	DB2	DB2 address space job name	CICS	CICS address space job name	IMS MSG	IMS region name	IMS CMD	IMS LTERM name	JES3	JES3 SYSID name	JRNL	job name on whose behalf the Journal message was issued	TIME	MAINVIEW AutoOPERATOR job name	EXT	job name of issuer	ALRM	name of issuer
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JRNL	job name on whose behalf the Journal message was issued																										
TIME	MAINVIEW AutoOPERATOR job name																										
EXT	job name of issuer																										
ALRM	name of issuer																										
&IMFTEXT	message text that caused the EXEC to be scheduled																										
&IMFTOKEN	token ID of the message. Same as hardcopy ID Used to attach multiline WTO Minor/Major Lines.																										

Table 8-3 MAINVIEW AutoOPERATOR-Supplied EVENT Variables (Part 6 of 6)

Variable Name	Description
&IMFVIEW	name of the view associated with the alarm
WORDxxx	xxx represents a number (for example, &WORD4) These are variables created by the Rule Processor to represent the different words in the text of the event that fire a Rule. The variable &WORD3 should resolve to the third word of the text of the event. Word variables are delimited by blanks and commas in the text.

List of Variables for ALRT-initiated Rules

The following table shows the variables available when you create Rules for the ALRT event type.

Table 8-4 Variables Available for Creating Rules for ALRT Events (Part 1 of 2)

Name	Contents	Length/Format
AMFKEY	key of the ALERT	1-64 / character
AMFTEXT	text of the ALERT	0-255 / character
AMFALARM	alarm value of the alert	1 / Y (YES) or N (NO)
AMFCOLOR	color of ALERT	6 / as specified by COLOR parameter
AMFEDIR	increase or decrease the priority of the ALERT when it is escalated	1 / character (U or D)
AMFEDISP	keep or delete the ALERT at the final escalation level	1 / character (K or D)
AMFEEXEC	name of EXEC and EXEC parameters scheduled at final escalation priority	0 to 255 / character
AMFEINT1 AMFEINT2 AMFEINT3 AMFEINT4 AMFEINT5 AMFEINT6	number (in minutes) from 0 to 9999	4 / numeric (or null)
AMFEXEC	EXEC and EXEC parameters associated with the ALERT	0-256 / character
AMFHELP	extended Alert member name	8 / character
AMFIDATE	date ALERT was issued	9 / dd-mmm-yy
AMFITIME	time ALERT was issued	8 / hh:mm:ss
AMFORGN	origin of ALERT	1-8 / character
AMFPCMD	primary command specified in ALERT	0-256 / character
AMFPRIOR	priority of ALERT	13 / as specified in PRIORITY parameter

Table 8-4 **Variables Available for Creating Rules for ALERT Events (Part 2 of 2)**

AMFPSYS	value for SYSTEM keyword (could be either YES or NO)	1 / character (Y or null)
AMFPUB	value of the Publish keyword when an ALERT is created	2-7/ADD, REPLACE, or NO
AMFQUEUE	name of queue for ALERT	8 / character
AMFRTAIN	specifies whether or not to retain an ALERT across BBI-SS PAS warm and cold starts	1 / character (Y or N)
AMFSSID	system from which ALERT was issued	8 / character
AMFTGT	target to which ALERT was issued	1-8 / character
AMFUDATA	user data string	0-256 / character
AMFUSER	name of the user ID that the ALERT is addressed to	8 / character

Chapter 9 Managing Rules and Automation Using the Automation Control Panel

After you have created Rules and Rule sets, you can use option 2, Display / Modify Rules and Rule Sets, from the Automation Menu to display the Automation Control Menu.

The Automation Control panel, shown in Figure 9-1 on page 9-2, has three areas that provide

- an overview of automation status and strategy (top area)
- an overview of the automation statistics (middle area)
- a scrollable list of Rule Sets in the Automation library (bottom portion), indicating
 - whether a Rule Set is enabled or disabled
 - number of Rules in the Rule set
 - number of times MAINVIEW AutoOPERATOR has fired Rules in a Rule Set
 - how many events were filtered through a Rule Set
 - whether Rule Set filtering is enabled or disabled
 - date and time of the firings
 - what automation strategy a Rule set has been assigned

Figure 9-1 Automation Control Panel

```

BMC Software ----- Automation Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
TGT ==> MVR3
Primary commands: Add, Statshow, Cmdshow
DATE --- 01/02/14
TIME --- 13:23:05

Automation Status ==> ACTIVE (Active, Inactive)
Automation Strategy ==> INDIVIDUAL (Individual, All, First)
Honor MPF Suppression ==> NO (NO/YES)

Automation Statistics
Total Events 624 Display suppressed 0
Events Handled 49 Hardcopy suppressed 0
Current arrival rate 3 / sec Rule generated Alerts 6
Peak arrival rate 10 / sec Rule invoked Execs 0

Automation Library
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (SA)ve
(M)ove, (B)efore or (A)fter, (F)ilter Criteria

LC Rule-Set Status Rules Fired Filtered Date Time Strategy
___ RULQUAL1 ENABLED 6 46 624d 01-FEB-01 13:18:50 QUAL
___ RULJRN1 ENABLED 108 93 183 01-FEB-01 13:18:49 FIRST
___ RULJRN2 ENABLED 53 6 8 01-FEB-01 13:18:49 FIRST
___ RULJRN3 ENABLED 59 46 32 01-FEB-01 13:18:49 ALL
___ RULJRN4 ENABLED 56 9 17 01-FEB-01 13:18:49 FIRST
___ RULJRN5 ENABLED 37 346 46 01-FEB-01 13:18:49 ALL
___ RULJ911 ENABLED 6 46 46 01-FEB-01 13:18:49 FIRST
___ AAORULCC DISABLED N/A N/A N/A N/A N/A
___ AAORULJB DISABLED N/A N/A N/A N/A N/A

```

This panel is scrollable; use the **PF7/UP** and **PF8/DOWN** keys to scroll through the list of Rule Sets.

Use the Automation Control panel to

- set your Automation Strategy
- see the Automation Statistics
- manage groups of Rules, called Rule Sets, to provide simpler management of your basic automation

This function includes using Rule Set filtering that allows you to limit the number of events and the types of events that are passed through a Rule Set. For more information about using Rule Set filtering, refer to “Filtering Events for Rule Sets” on page 9-12.

The following sections describe setting automation strategy for your Rule Sets.

Setting Automation Status/Strategy (Upper Portion)

Figure 9-2 Automation Control Panel: Upper Portion

```

BMC Software ----- Automation Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
Primary commands: Add, Statshow, Cmdshow
Automation Status      ==> ACTIVE          (Active, Inactive)
Automation Strategy    ==> INDIVIDUAL      (Individual, All, First)
Honor MPF Suppression ==> NO              (NO/YES)
TGT ==> MVR3
DATE --- 01/02/14
TIME --- 13:23:05

```

Automation Status refers to whether automation is inactive or active. Inactive means that there is no automation taking place even if you have Rule Sets that are enabled. Use this field when you want to shut down automation quickly by typing **INACTIVE** in the field. To restart automation, type **ACTIVE** in this field.

Automation Strategy determines which Rules (and how many Rules) get fired to handle events. For example, an event might match the selection criteria for *more than one* Rule. If you decide that you want all the Rules to fire, you must specify the strategy **ALL**.

If you decide that you do *not* want all the Rules fired, you must choose a different strategy. The different strategy names are as follows:

- FIRST
- INDIVIDUAL

Choosing an Automation Strategy is a very important decision and it can affect how you create Rules. Refer to “Choosing an Automation Strategy” on page 9-11 for a complete discussion about how to set Automation Strategy.

Using Primary Commands

You can enter the following primary commands on the **COMMAND** line of the Automation Control panel.

Command	Parameters	Description
ADD	xx RULxxxxxx	<p>If xx is specified, causes a new Rule Set to be created with the name AAORULxx, where xx is the suffix ID of the Rule Set. The default status of the new Rule Set is ENABLED.</p> <p>If RULxxxxxx is specified, a new Rule Set is created with the name RULxxxxxx, where xxxxx is a user-specified suffix. The suffix can be five characters or fewer. The default status of the new Rule Set is ENABLED.</p> <p>Note: The new Rule Set is <i>not saved</i> until a SAVE command is performed on the Rules Set Overview panel. If you change the status of the new Rule Set to DISABLED before you save the Rule Set, the Rule Set is permanently deleted from storage.</p> <p>Rule Sets cannot be named AAORULBx, where x is any alphanumeric value. This naming pattern is reserved for MAINVIEW AutoOPERATOR use only.</p> <p>Valid characters that can be used in the Rule Set name are letters A through Z, numbers 0 through 9, the pound sign (#), the at sign (@), and the dollar sign (\$).</p>
STATSHOW	ON OFF	<p>Shows or hides the Automation Statistics from the Automation Control display. Hiding the Automation Statistics allows for more scrollable lines in the Automation Library section of the display.</p> <p>Enter on the COMMAND line:</p> <p>STATSHOW OFF: To hide Automation Statistics</p> <p>STATSHOW ON: To show display Automation Statistics</p> <p>STATSHOW: Toggles between showing and hiding Automation Statistics. If Automation Statistics are displayed, hides them. If Automation Statistics are not displayed, displays them.</p> <p>The STATSHOW setting remains in effect until you change it.</p>
CMDSHOW	ON OFF	<p>Shows or hides the Line Command Help from the Automation Control display. Hiding the Line Command Help allows for more scrollable lines in the Automation Library section of the display.</p> <p>Enter on the COMMAND line:</p> <p>CMDSHOW OFF: To hide Line Command Help</p> <p>CMDSHOW ON: To show Line Command Help</p> <p>CMDSHOW: Toggles between showing and hiding Line Command HELP. If Line Command Help is displayed, hides it. If Line Command Help is not displayed, displays it.</p> <p>The CMDSHOW setting remains in effect until you change it.</p>

Describing Fields

The following list describes the fields.

Field	Description
Automation Status	Indicates whether the Rule Processor itself is ACTIVE or INACTIVE . This field can be modified by typing over the field.
Automation Strategy	<p>Controls which Rules will be fired when an event meets the selection criteria for more than one Rule.</p> <p>Valid values are FIRST, ALL, and INDIVIDUAL. This field can be modified by typing over the field.</p> <p>Rules are organized by Rules Sets and the search order for a Rule depends on the order in which the Rule Sets appear in the “Automation Control Panel” on page 9-2.</p> <p>Refer to “Choosing an Automation Strategy” on page 9-11 for information about selecting an Automation Strategy.</p>
Honor MPF Suppression	<p>Provides support for the IBM Message Processing Facility (MPF).</p> <p>Note: This field is supported only if you have the MAINVIEW AutoOPERATOR for OS/390 option.</p> <p>If NO is specified, all messages are sent to the Rule Processor regardless of any action that MPF might have taken with the message.</p> <p>If YES is specified, any message that is suppressed with MPF is not sent to the Rule Processor. The message does not appear in the Event Activity Statistics application.</p>

Viewing Automation Statistics (Middle Portion)

Figure 9-3 Automation Control Panel: Middle Portion

Automation Statistics			
Total Events	624	Display suppressed	0
Events Handled	49	Hardcopy suppressed	0
Current arrival rate	3 / sec	Rule generated Alerts	6
Peak arrival rate	10 / sec	Rule invoked Execs	0

All of the automation statistics shown on this panel are statistics accumulated since the last MAINVIEW AutoOPERATOR cold start or since the last time the statistics were reset by using the **.RESET STATS** command. Fields in the Automation Statistics portion of the Automation Control panel are described in the following list.

Note: You can hide this portion of the panel to allow for more scrollable lines in the bottom portion of the panel by using the **STATSHOW** primary command. Refer to “Using Primary Commands” on page 9-3 for more information.

Field	Description
Total Events	Is the total number of events that have been presented to the Rule Processor as potential candidates for automation.
Display Suppressed	Is the total number of times the Rule Processor suppressed the display of an event.
Events Handled	Is the total number of times a Rule was fired on a matched event.
Hardcopy Suppressed	Is the total number of times the Rule Processor has suppressed messages destined for SYSLOG or the Journal.
Current Arrival Rate	Is the rate at which events are presented to the Rule Processor during the last 10 seconds.
Rule generated Alerts	Is the total number of ALERTs generated directly from the Rule Processor. This field does not include any ALERTs that are generated by the IMFEXEC ALERT command.
Peak arrival rate	Is the highest arrival rate of events passed to the Rule Processor since activation.
Rule invoked EXECs	Is the total number of times the Rules processor has scheduled an EXEC.

Grouping Rules into Rule Sets (Bottom Portion)

Use this portion of the panel to see all the Rule Sets, their status, and how many Rules have been fired.

Figure 9-4 Automation Control Panel: Bottom Portion

Automation Library									
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (SA)ve (M)ove, (B)efore or (A)fter, (F)ilter Criteria									
LC	Rule-Set	Status	Rules	Fired	Filtered	Date	Time	Strategy	
---	RULQUAL1	ENABLED	6	46	624d	01-FEB-01	13:18:50	QUAL	
---	RULJRN1	ENABLED	108	93	183	01-FEB-01	13:18:49	FIRST	
---	RULJRN2	ENABLED	53	6	8	01-FEB-01	13:18:49	FIRST	
---	RULJRN3	ENABLED	59	46	32	01-FEB-01	13:18:49	ALL	
---	RULJRN4	ENABLED	56	9	17	01-FEB-01	13:18:49	FIRST	
---	RULJRN5	ENABLED	37	346	46	01-FEB-01	13:18:49	ALL	
---	RULJ911	ENABLED	6	46	46	01-FEB-01	13:18:49	FIRST	
---	AAORULCC	DISABLED	N/A	N/A	N/A	N/A	N/A	N/A	
---	AAORULJB	DISABLED	N/A	N/A	N/A	N/A	N/A	N/A	

This panel also shows if Rule Set filtering has been turned on for a Rule Set. You turn on Rule Set filtering for a Rule Set with the line command (F)ilter Criteria.

Rule Sets that have been set to filter events but the filter is turned off are noted by a d in the **Filtered** column; for example:

LC	Rule-Set	Status	Rules	Fired	Filtered	Date	Time	Strategy
---	RULQUAL1	ENABLED	6	46	624d	01-FEB-01	13:18:50	QUAL

Rule Sets that have been set to filter events and the filter is turned on will display an e in the **Filtered** column. A blank indicates that no filter has been created for the Rule Set. For more information about Rule Set filtering, refer to “Filtering Events for Rule Sets” on page 9-12.

To see more information about any one Rule Set, select the Rule Set with the (S)elect line command in the LC column and view the Rule Set Overview panel. Refer to Chapter 10, “Using the Rule Set Overview Panel to Manage Rules in Rule Sets” for more information about the Rule Set Overview panel.

The fields in the Automation Library portion of the Automation Control panel include

Field	Description
Rule-Set	<p>Is the PDS member name of a Rule Set within the Automation Library where all Rules are contained.</p> <p>Rule Sets names cannot use AAORULBx, where x is any alphanumeric value. This naming pattern is reserved for MAINVIEW AutoOPERATOR use only.</p>
Status	<p>Is the state of the Rule Set. Valid values are ENABLED, DISABLED, and TEST.</p> <ul style="list-style-type: none"> ENABLED means that the Rules within a Rule Set are available to process events. However, an ENABLED Rule Set can contain DISABLED Rules and TEST Rules. Rule Set names specified with the parameter RULESET= in BBPARM member BBISSP00 are ENABLED automatically after a cold start. DISABLED means that the Rules within a Rule Set are not available to process events. Rule Sets <i>not</i> specified with the parameter RULESET= in BBPARM member BBISSP00 are DISABLED after a cold start. TEST means that the Rules within a Rule Set are fired in test mode, which means that the only action to be performed is to schedule the appropriate EXEC with the variable IMFRLSTA set to TEST.
Rules	Is the number of Rules contained in the Rule Set.
Fired	Is the number of times Rules within the Rule Set were fired.
Filtered	<p>Is the number of events filtered through a Rule Set.</p> <p>For more information about filtering events through Rule Sets, refer to “Filtering Events for Rule Sets” on page 9-12.</p> <p>In the space immediately following the Filtered column, is one of three values:</p> <ul style="list-style-type: none"> d Indicates Rule Set filtering is disabled for a Rule Set. e Indicates Rule Set filtering is enabled for a Rule Set. blank Indicates no Rule Set filtering has been set for a Rule Set.
Date	Is the date on which the Rule Set was last activated in the format DD-MMM-YY.
Time	Is the time when the Rule Set was last activated.

Strategy Shows a value of: FIRST, ALL, or INDIVIDUAL.Strategy will be displayed only if an automation strategy of INDIVIDUAL was specified in the upper portion of the panel. Refer to “Choosing an Automation Strategy” on page 9-11.

Using Line Commands

You can hide this portion of the panel to allow for more scrollable lines in the bottom portion of the panel by using the CMDSHOW primary command. Refer to “Using Primary Commands” on page 9-3 for more information.

Use the following line commands in the LC column:

Command	Description
Select S	Presents a summary of all the Rules within a Rule Set (displays the Rule Set Overview panel). This command does not work on a Rule Set that is DISABLED.
Enable E	Makes all the enabled Rules in the Rule Set eligible to participate in event selection.
Disable D	Stops the selection criteria filtering process for all Rules within the Rule Set. If the Rule Set is not saved, all changes made to the Rule Set will be lost.
Test T	Makes the Rules within a Rule Set available to message traffic, but in test mode, which means that the only action to be performed will be invoking the appropriate EXEC with variable IMFRLSTA set to TEST.
SAve SA	Saves a Rule Set in the Automation Library.
Move M	Moves an ENABLED Rule Set to a different location within the Automation Library list of active Rule Sets. The sequence of the Rule Sets in the Library is important if you specify an automation strategy of FIRST because this strategy means the first Rule within a Rule Set is fired when it matches an event. Used in conjunction with the After A and Before B line commands.
Before B	Indicates the line within the Automation Library List of ENABLED Rule Sets before which an ENABLED Rule Set is moved with the Move M line command.

After | A Indicates the line within the Automation Library List of ENABLED Rule Sets after which an ENABLED Rule Set is moved with the Move | M line command.

Choosing an Automation Strategy

Automation Strategy determines which Rules (and how many Rules) get fired to handle events.

For example, an event might match the selection criteria for *more than one* Rule. If you decide that you want all the Rules to fire, you must specify the strategy ALL.

If you decide that you do **not** want all the Rules fired, you must choose a different strategy. The different strategy names are as follows:

- FIRST
- INDIVIDUAL

If you choose an automation strategy of ALL or FIRST, all Rule Sets are searched for Rules to match a certain event. You can specify ALL or FIRST for each of the Rule Sets on this panel.

Choose a strategy of INDIVIDUAL if you want to set an Automation Strategy for *each Rule Set*.

If you do not select a strategy, the default is FIRST.

Selecting FIRST

Selecting FIRST means that *only the first Rule* that matches an event will be fired.

If you select FIRST, the order of your Rules within a Rule Set and the order of Rule Sets in the Automation Library is very important because this order determines which Rule fires first.

Selecting ALL

Selecting an Automation Strategy of ALL means that all the Rules within all Rule Sets that match an event will be fired.

When you select this strategy, potentially more than one Rule can fire to handle a single event.

Selecting INDIVIDUAL

If you select the INDIVIDUAL automation strategy, you can specify that each Rule Set has its own strategy of FIRST or ALL. The default value is FIRST. In this case, you can have several Rule Sets that will use FIRST and one Rule from each Rule Set can fire.

In other words, the strategy of Rules are applied for each Rule Set instead of for all active Rule Sets.

Use the Rule Set Overview Panel to select a strategy for a Rule Set.

Rule Set Filter

The Rule Set filter resolves two distinct requirements for a Rule Set:

- Filters events for the Rule Set to reduce the number of events with which each Rule in the Rule Set must be compared.
- Sets defaults for all Rules in the Rule Set. Currently, the default is limited to Criteria Match Rate Threshold.

Filtering Events for Rule Sets

A very important task for making your automation with Rules more efficient is to use Rule Set filtering. Using Rule Set filtering, you can limit the number of events and the types of events that are passed through a specific Rule Set.

Without Rule Set filtering enabled, every Rule Set is searched for matching Rules for every event the Rule Processor sees. With Rule Set filtering enabled, you can specify that events *must meet* a Rule Set selection criteria (called filter criteria) before a Rule Set is searched for matching Rules. This feature enables you to *selectively lessen* the number of events that are passed through each Rule Set.

For example, you can specify that a Rule Set named RULHASP will be searched for all events with a Text-ID of \$HASP*. You can limit the search for matching Rules to a single Rule Set or group of Rule Sets.

In Figure 9-5, note the column **Filtered**. This value represents the number of events that the Rule Set was searched for matching Rules.

Figure 9-5 Automation Control Panel: Rule Set Filtering

Automation Statistics								
Total Events	624	Display suppressed						0
Events Handled	49	Hardcopy suppressed						0
Current arrival rate	3 / sec	Rule generated Alerts						6
Peak arrival rate	10 / sec	Rule invoked Execs						0
Automation Library								
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (SA)ve (M)ove, (B)efore or (A)fter, (F)ilter Criteria								
LC	Rule-Set	Status	Rules	Fired	Filtered	Date	Time	Strategy
___	RULQUAL1	ENABLED	6	46	624d	01-FEB-01	13:18:50	QUAL
___	RULJRN1	ENABLED	108	93	183	01-FEB-01	13:18:49	FIRST
___	RULJRN2	ENABLED	53	6	8	01-FEB-01	13:18:49	FIRST
___	RULJRN3	ENABLED	59	46	32	01-FEB-01	13:18:49	ALL
___	RULJRN4	ENABLED	56	9	17	01-FEB-01	13:18:49	FIRST
___	RULJRN5	ENABLED	37	346	46	01-FEB-01	13:18:49	ALL
___	RULJ911	ENABLED	6	46	46	01-FEB-01	13:18:49	FIRST
___	AAORULCC	DISABLED	N/A	N/A	N/A	N/A	N/A	
___	AAORULJB	DISABLED	N/A	N/A	N/A	N/A	N/A	

Therefore, the information for Rule Set RULJRN1 looks like the following panel:

Automation Statistics									
Total Events			624	Display suppressed					0
Events Handled			49	Hardcopy suppressed					0
Current arrival rate	3	/ sec		Rule generated Alerts					6
Peak arrival rate	10	/ sec		Rule invoked Execs					0
Automation Library									
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (SA)ve (M)ove, (B)efore or (A)fter, (F)ilter Criteria									
LC	Rule-Set	Status	Rules	Fired	Filtered	Date	Time	Strategy	
___	RULQUAL1	ENABLED	6	46	624d	01-FEB-01	13:18:50	QUAL	
___	RULJRN1	ENABLED	108	93	183	01-FEB-01	13:18:49	FIRST	

Rule Set RULJRN1 contains a total of 108 Rules. Of them, 93 were fired for 183 events that were seen by (or filtered through) the Rule Set. However, a total of 624 events were seen by the Rule Processor. Therefore, with filtering enabled, the number of events seen by Rule Set RULJRN1 was lessened, enabling the Rules Processor to perform more efficiently.

In contrast, for Rule Set RULQUAL1, note the lowercase d in the **Filtered** column. The d means that Rule Set filtering has been disabled for RULQUAL1. Also, note that the number of events filtered through the Rule Set is 624, because every event seen by the Rule Processor was also seen by Rule Set RULQUAL1.

“Enabling Rule Set Filtering and Rule Set Match Rate” describes how to enable Rule Set filtering.

Enabling Rule Set Filtering and Rule Set Match Rate

For existing Rule Sets, Rule Set filtering can be modified in two ways:

- From the Automation Control panel, type **F** in the line command (**LC**) column for the targeted Rule Set. Using this method, the filter changes are saved to the Rule Set BBPARM member immediately upon exiting the filter.
- From the Rule Set Overview panel, type **Filter** on the **COMMAND** line. Using this method, the filter is updated when you SAVE and exit the Rule Set.

The following example shows how a Rule Set with filtering enabled lessens the number of events seen by the Rule Set and makes automation with Rules more efficient.

To view the filter criteria for Rule Set RULJ911, follow these steps:

- Step 1** From the Automation Control panel, type **F** in the **LC** column next to the Rule Set (Figure 9-6).

Figure 9-6 Automation Control Panel: Viewing a Rule Set Filter

```

BMC Software ----- Automation Control ----- MAINVIEW AutoOPERATOR
COMMAND ==> TGT ==> MVR3
Primary commands: ADD, STATSHOW, CMDSHOW DATE --- 01/02/14
TIME --- 13:23:05

Automation Status ==> ACTIVE (Active, Inactive)
Automation Strategy ==> INDIVIDUAL (Individual, All, First)
Honor MPF Suppression ==> NO (NO/YES)

Automation Statistics
Total Events 624 Display suppressed 0
Events Handled 49 Hardcopy suppressed 0
Current arrival rate 3 / sec Rule generated Alerts 6
Peak arrival rate 10 / sec Rule invoked Execs 0

Automation Library
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (SA)ve
(M)ove, (B)efore or (A)fter, (F)ilter Criteria

LC Rule-Set Status Rules Fired Filtered Date Time Strategy
___ RULQUAL1 ENABLED 6 46 624d 01-FEB-01 13:18:50 QUAL
___ RULJRN1 ENABLED 108 93 183 01-FEB-01 13:18:49 FIRST
___ RULJRN2 ENABLED 53 6 8 01-FEB-01 13:18:49 FIRST
___ RULJRN3 ENABLED 59 46 32 01-FEB-01 13:18:49 ALL
___ RULJRN4 ENABLED 56 9 17 01-FEB-01 13:18:49 FIRST
___ RULJRN5 ENABLED 37 346 46 01-FEB-01 13:18:49 ALL
F__ RULJ911 ENABLED 6 46 46 01-FEB-01 13:18:49 FIRST
___ AAORULCC DISABLED N/A N/A N/A N/A N/A
___ AAORULJB DISABLED N/A N/A N/A N/A N/A

```

Figure 9-7 on page 9-16 is displayed.

Figure 9-7 Filter Criteria Panel: Viewing the Filter Criteria

```

BMC Software ----- Filter Criteria ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- JPPI

        Rule-set === RULJUN00

Text Description:
Text ID      ===> IM911*                               First word of message
Text String (Enter Below):

Event Type   ===> JRNL                                Type of event ( ? for list)

Mode         ===> ENABLED                             (Status - ENABLED/DISABLED)

Ruleset criteria match rate threshold:
If matched   ===>                                     (Maximum # times matched within INTERVAL,
1-100)
in seconds   ===>                                     (Interval length, 1-99999 seconds)
thenstatus ===> (SUSPEND, DISABLE, NOACTION)

Press ENTER for Variable Dependencies Panel,
END to apply changes, CANCEL to cancel changes

```

On the Filter Criteria panel, note how you can specify a **Text-ID**, **Text String**, and **Event Type** on the panel. The filter criteria for this Rule Set shows that all events with a Text-ID that begins with IM911 and are JRNL events will be seen by this Rule Set.

The following list describes the fields on this panel:

Field Name	Description
Text ID	Fill in the Text-ID of the event that you want to be seen by this Rule Set. This maximum length of the Text-ID is 16 characters. To have the Rule Set select events with more information, use the Text String field.
Text String	Specify message/event text to be matched in addition to the Text-ID. The maximum length of the Text-ID is 75 characters.

Event Type Specify the event type for the events that will be seen by the Rule Set.

You can specify

ALERT JES3 DB2

CMD MSG IMS

EXT CICS JRNL

Note: For event type MSG:

- If you journal the message, the entire message (including the reply ID) is written to the journal.
- If you use IMFTEXT, the reply ID is stripped from the message.
- WORD1 is the first word after the reply ID.
- TEXT ID is the first word after the reply ID.
- TEXT STRING does not include the reply ID.

Mode Allows you to enable or disable Rule Set filtering for the Rule Set.

You can specify filter criteria and then disable the filtering for the Rule Set. This option means the Rule Set will be searched for matching Rules for every event the Rule Processor sees.

When Rule Set filtering is disabled, a lowercase **d** appears in the **Filtered** column of the Automation Control panel. On the Rule Set Overview panel, a field denotes whether the Rule Set filtering has been enabled or disabled.

Rule Set Criteria Match Rate Threshold

The Rule Set Criteria Match Rate Threshold provides a default Criteria Match Rate to be used for each Rule in this Rule Set that does not have a value specified. Refer to Chapter 5, “Creating Rules for Events: Using the Rule Processor Detail Control Panel” for details on Criteria Match Rates within an individual Rule.

If matched	<p>Specifies the number of times a Rule can be matched to an event within a certain interval of time.</p> <p>Possible values range is 1 to 100 times.</p> <p>This value, also called match count target, is used in conjunction with the in seconds and then status fields to define what event rate is used to prevent the Rule from matching too often.</p> <p>The Rule Set match rate is reset only when the Rule Set filter is updated or if the BBI-SS PAS is cold started.</p>
in seconds	<p>Is the interval of time, set in seconds, over which the match count will be collected for an event.</p> <p>Possible interval range is 1 to 99999 seconds.</p> <p>When a Rule is matched the number of times set in the If matched field within the time interval set in the in seconds field, the action specified in the then status field is taken.</p>
then status	<p>Specifies the mode to which a Rule is set when the number of times it is matched reaches the match count target within a specific time interval. Possible values are as follows:</p> <p>SUSPEND: Suspends the Rule.</p> <p>When a Rule is in the SUSPEND state, events will no longer fire this Rule. In a Rule Set with a strategy of FIRST, the event will be eligible to fire a subsequent Rule in this Rule Set. When the match rate falls below the threshold, the Rule will be eligible to fire again.</p> <p>DISABLE: Disables the Rule.</p> <p>Event matches to the Rule are ignored when the actual match count exceeds the specified match count target, and the Rule is disabled. You must manually re-enable the Rule.</p> <p>NOACTION: Takes no action.</p> <p>When the match count for a Rule exceeds its match rate, the Rule is set for NOACTION. The Rule will match and the fired count will increase, but no actions specified for that Rule will take place. The action is resumed when the match rate falls below the threshold.</p>

Step 2 Press **Enter**.

Figure 9-8 on page 9-19 is displayed.

Figure 9-8 Variable Dependencies - Filter Panel

```
BMC Software ----- Variable Dependencies - Filter ----- MAINVIEW AutoOPERATOR  
COMMAND ==> TGT --- MVR3
```



```
Rule-set === RULJ911
```

Variable-name		Op	Variable-Value	OR/ AND


```
Press ENTER for Filter Criteria Panel,  
END to apply changes, CANCEL to cancel changes
```

You can use this panel to specify variables as additional filter criteria for the Rule Set. You can use any SHARED or LOCAL variables on this panel. Refer to “Using Variables in the Rule Processor” on page 8-6 for more information about using variable dependencies for selection criteria.

Step 3 Press **PF3** to return to the Automation Control Panel.

After you have specified the filter criteria for the Rule Set, you might want to examine the Rules within the Rule Set to ensure the Rules are adequate for automating the events.

To examine the Rules, from the Automation Control panel, type **S** in the **LC** column next to the Rule Set (Figure 9-9).

Figure 9-9 Automation Control Panel: Viewing a Rule Set's Rules

```

BMC Software ----- Automation Control ----- MAINVIEW AutoOPERATOR
COMMAND ==>
TGT ==> MVR3
Primary commands: Add, Statshow, Cmdshow
DATE --- 01/02/14
TIME --- 13:23:05

Automation Status ==> ACTIVE (Active, Inactive)
Automation Strategy ==> INDIVIDUAL (Individual, All, First)
Honor MPF Suppression ==> NO (NO/YES)

Automation Statistics
Total Events 624 Display suppressed 0
Events Handled 49 Hardcopy suppressed 0
Current arrival rate 3 / sec Rule generated Alerts 6
Peak arrival rate 10 / sec Rule invoked Execs 0

Automation Library
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (SA)ve
(M)ove, (B)efore or (A)fter, (F)ilter Criteria
LC Rule-Set Status Rules Fired Filtered Date Time Strategy
___ RULQUAL1 ENABLED 6 46 624d 01-FEB-01 13:18:50 QUAL
___ RULJRN1 ENABLED 108 93 183 01-FEB-01 13:18:49 FIRST
___ RULJRN2 ENABLED 53 6 8 01-FEB-01 13:18:49 FIRST
___ RULJRN3 ENABLED 59 46 32 01-FEB-01 13:18:49 ALL
___ RULJRN4 ENABLED 56 9 17 01-FEB-01 13:18:49 FIRST
___ RULJRN5 ENABLED 37 346 46 01-FEB-01 13:18:49 ALL
S___ RULJ911 ENABLED 6 46 46 01-FEB-01 13:18:49 FIRST
___ AAORULCC DISABLED N/A N/A N/A N/A N/A
___ AAORULJB DISABLED N/A N/A N/A N/A N/A

```

Figure 9-10 on page 9-21 is displayed.

Figure 9-10 Rule Set Overview Panel: Viewing a Rule Set's Rules

BMC Software ----- Rule Set Overview -----				MAINVIEW AutoOPERATOR			
COMMAND ==>				TGT --- MVR3			
Rule Set ID: RULJ911				Ruleset Strategy ==> FIRST			
				DATE --- 01/02/14			
Primary commands: Add, Save, Sort, Unsort, Reset, Filter				TIME --- 13:23:24			
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (DE)lete, (I)nsert							
				(C)opy/(CC)opy, (M)ove/(MM)ove, (B)efore or (A)fter, (R)repeat			
Sort Criterion:				Filter ENABLED			
				right/left			
LC	Rule-id	Stat	Text-id	Type	Fired EXEC	Changed	ID
---	IM9113I	ENA	IM9113I	JRNL	12	01/02/27 16:36	CMF16
---	IM9114I	ENA	IM9114I	JRNL	13	01/02/21 15:28	CMF16
---	IM9117I	ENA	IM9117I	JRNL	0	01/02/27 16:35	CMF16
---	IM9118I	ENA	IM9118I	JRNL	17	01/02/05 08:12	CMF16
---	IM9119I	ENA	IM9119I	JRNL	0	01/02/22 07:52	CMF16
---	ALLJRNL	ENA	IM911*	JRNL	4	01/02/05 08:10	CMF16
***** END OF DATA *****							

The center of this panel shows that the filter is enabled. You also can see in the **Text-id** fields, the Rules all specify to match with events that begin with **IM911**. The **Type** column also shows that all the event types for these Rules are JRNL. There is even a “catch-all” Rule, Rule-ID **ALLJRNL**, that will be searched for all events that begin with IM911.

Press **PF3** to exit this Rule Set. If you did not change any Rules, you will not be prompted to save the Rule Set. If you made changes, enter **SAVE** on the **COMMAND** line from the Rule Set Overview or enter **SAVE** when prompted while exiting the Rule Set.

Chapter 10 Using the Rule Set Overview Panel to Manage Rules in Rule Sets

Use the Rule Set Overview panel to display and manage Rules within a specific Rule Set. Rules are grouped into Rule Sets based on criteria such as

- all are used for a single automation procedure (for example, CSM)
- all were created by the same department
- all address the same MVS component (for example, allocation)

Use the Rule Set Overview panel to add, delete, enable, disable, or modify individual Rules within a specific Rule Set. Rule Set Filtering also can be enabled or disabled from this panel. For more information about Rule Set filtering, refer to “Filtering Events for Rule Sets” on page 9-12.

Access the Rule Set Overview panel by selecting a Rule Set from the Automation Control panel. You can scroll this list of Rules either up/down or right/left. Figure 10-1 on page 10-2 shows the Rule Set Overview panel when you access it from the Automation Control panel.

Figure 10-1 Rule Set Overview Panel—View 1

```

BMC Software ----- Rule Set Overview ----- MAINVIEW AutoOPERATOR
COMMAND ==>
Rule Set ID: AAORULST      Ruleset Strategy ==> FIRST      DATE --- 01/02/01
Primary commands: Add, Save, Sort, Unsort, Reset, Filter      TIME --- 14:21:30
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (DE)lete, (I)nsert
              (C)opy/(CC)opy, (M)ove/(MM)ove, (B)efore or (A)fter, (R)epet
Sort Criterion:              Filter ENABLED              right/left

```

LC	Rule-id	Stat	Text-id	Type	Fired	EXEC	Changed	ID
___	IS0834I	DIS	IS0834I	CMD	0	AB2START	01/01/27 08:59	MXY1
___	IS0836I1	DIS	IS0836I	JRNL	0	AB2TERM	01/02/02/13 16:53	DDH1
___	DFS9940	DIS	DFS994I	IMS	0	IMSTART1	01/02/13 17:32	DDH1
___	IM0001I	DIS	IM0001I	IMS	0	IMSTART1	01/02/13 17:32	DDH1
___	IMSCHCK	ENA	/CHE	IMS	0	IMSTERM1	01/03/27 09:02	MXY1
___	RUL00001	ENA	/CHE	JRNL	0	IMSTERM1	01/02/16 17:22	DDH1
___	IS0861I	ENA	IS0861I	JRNL	1	AB2START	01/02/13 16:52	DDH1
___	IS0862I	ENA	IS0862I	JRNL	0	AB2TERM	01/02/13 16:53	DDH1
___	IM9218I	ENA	IM9218I	JRNL	0	IMSTART1	01/03/13 17:32	DDH1

```

***** END OF DATA *****

```

Scroll *left* to see the **Group**, **Function**, **Code**, **Author**, and **Description** columns as shown in Figure 10-2 on page 10-3.

The fields on this view of the panel are as follows.

Field	Description
Rule-id	Is the 1- to 8-character unique ID assigned to this Rule at its creation.
Stat	Is the Rule status, which can be one of the following: ENA, DIS, TST, or SUS. SUS status applies when the Rule is suspended through the use of the If matched , in seconds , and then status fields on the Rule Processor Detail Control panel. Refer to “Using the Criteria Match Rate Fields” on page 5-18.
Text-id	Is the 1- to 16-character first word of the message or command defined for this Rule.
Type	Is the origin of the event, which can be one of the following types: MSG, CMD, JRNL, IMS, ALE, CICS, JES3, EXT, DB2, or TIME.
Fired	Is the number of times the Rule was triggered.

EXEC	Is the name of the EXEC that will be scheduled if the Rule fires. If the EXEC name specified in the Rule is a variable, its length may be more than 8 characters. Only the first 8 characters of the EXEC field in the Rule are presented in this field.
Changed	Is the date (YY/MM/DD) and time (HH:MM:SS) the Rule was last modified. This data is stored in the Rule.
ID	Is the user ID that made the most recent change to this Rule. This data is stored in the Rule. Scrolling <i>left</i> shows the Group, Function, Code, Author, and Description fields (Figure 10-2).

Figure 10-2 Rule Set Overview Panel—View 2

```

BMC Software ----- Rule Set Overview ----- MAINVIEW AutoOPERATOR
COMMAND ==>
Rule Set ID: AAORULST      Ruleset Strategy ==> FIRST      DATE --- 01/02/01
Primary commands: Add, Save, Sort, Unsort, Reset, Filter      TIME --- 14:21:30
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (DE)lete, (I)nsert
              (C)opy/(CC)opy, (M)ove/(MM)ove, (B)efore or (A)fter, (R)peat
Sort Criterion:              Filter ENABLED              right/left

```

LC	Rule-id	Status	Group	Function	Code	Author	Description
___	IS0834I	DIS	STRTERM	DB2START	DB	BOB	SCHEDULE DB2START EXEC
___	IS0836I	DIS	STRTERM	DB2TERM	DB	BOB	SCHEDULE DB2TERM EXEC
___	DFS9940	DIS					
___	IM0001I	DIS					
___	IMSCHCK	ENA					
___	RUL00001	ENA					
___	IS0861I	ENA					
___	IS0862I	ENA					
___	IM9218I	ENA					

```

***** END OF DATA *****

```

From this panel, scroll *right twice* to display the **Text-ID** and **Text-String** fields as shown in Figure 10-3 on page 10-4.

The following describes the fields on this view of the panel.

Field	Description
Rule-id	Is the one- to eight-character unique ID assigned to this Rule at its creation.

Stat	Is the Rule status, which can be one of the following statuses: ENA, DIS, TST, or SUS. SUS status applies when the Rule is suspended through the use of the If matched, in seconds, and then status fields on the Rule Processor Detail Control panel. Refer to “Using the Criteria Match Rate Fields” on page 5-18.
Group	Is the one- to eight-character group name defined for this Rule.
Function	Is the one- to eight-character function name defined for this Rule.
Code	Is the two-character code ID defined for this Rule.
Author	Is the one- to eight-character name of the author defined for this Rule.
Description	Is the description defined for this Rule. This field can be up to 25 characters. Scrolling <i>right twice</i> displays Text-ID and Text-String fields (Figure 10-3).

Figure 10-3 Rule Set Overview Panel—View 3

```

BMC Software ----- Rule Set Overview ----- MAINVIEW AutoOPERATOR
COMMAND ==>
Rule Set ID: AAORULST      Ruleset Strategy ==> FIRST      DATE --- 01/02/01
Primary commands: Add, Save, Sort, Unsort, Reset, Filter    TIME --- 14:21:30
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (DE)lete, (I)nsert
              (C)opy/(CC)opy, (M)ove/(MM)ove, (B)efore or (A)fter, (R)repeat
Sort Criterion:              Filter ENABLED              right/left

LC  Rule-id  Text-ID      Text-String
____
___ IS0834I
___ IS0836I1
___ DFS9940
___ IM0001I
___ IMSCHCK
___ RUL00001
___ IS0861I
___ IS0862I
___ IM9218I
***** END OF DATA *****

```

From this panel, scroll *right once* to see **Stat**, **Start Time**, **Interval**, **Stop Time**, **Stop Count**, and **Fired** fields as shown in Figure 10-4 on page 10-5. For more information see “Service Select Code” on page 14-3.

The following list describes the fields on this view of the panel.

Field	Description
Rule-ID	Is the 1- to 8-character unique ID assigned to this Rule at its creation.
Text-ID	Is the 1- to 16-character first word of the message or command defined for this Rule.
Text-String	Is the text string defined for this Rule; can be up to 26 characters and includes the Text ID.

For information about Text-ID and Text-String, see page 9-17.

Scrolling *right once* displays **Stat**, **Start Time**, **Interval**, **Stop Time**, **Stop Count**, and **Fired** fields (Figure 10-4).

Figure 10-4 Rule Set Overview Panel—View 4

BMC Software ----- Rule Set Overview ----- MAINVIEW AutoOPERATOR							
COMMAND ==>				TGT --- DH22			
Rule Set ID: AAORULST		Ruleset Strategy ==> FIRST		DATE --- 01/02/01			
Primary commands: Add, Save, Sort, Unsort, Reset, Filter				TIME --- 14:21:30			
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (DE)lete, (I)nsert							
(C)opy/(CC)opy, (M)ove/(MM)ove, (B)efore or (A)fter, (R)repeat							
Sort Criterion:		Filter ENABLED		right/left			
LC	Rule-id	Stat	Start Time	Interval	Stop Time	Stop Count	Fired
___	IS0834I	DIS					0
___	IS0836I	DIS					0
___	DFS9940	DIS					0
___	IM0001I	DIS					0
___	IMSCHCK	ENA					0
___	RUL00001	ENA					0
___	IS0861I	ENA					1
___	IS0862I	ENA					0
___	IM9218I	ENA					0
***** END OF DATA *****							

From this panel, scroll *right once* to see **Job Name**, **Job Type**, **Job Class**, **RACF User-ID**, and **RACF Group** fields as shown in Figure 10-5 on page 10-7.

The fields on this view of the panel are as follows:

Field	Description
Rule-id	Is the one- to eight-character unique ID assigned to this Rule at its creation.
Stat	<p>Is the Rule status, which can be one of the following values: ENA, DIS, TST, or SUS.</p> <p>SUS status applies when the Rule is suspended through the use of the If matched, in seconds, and then status fields on the Rule Processor Detail Control panel. Refer to “Using the Criteria Match Rate Fields” on page 5-18.</p>
Start Time	<p>Displays (in hours, minutes, and seconds) at what clock time a time-initiated Rule begins firing.</p> <p>This field contains data only for Rules whose Event type is TIME.</p>
Interval	<p>Displays (in hours, minutes, and seconds) how often the Rule fires. For example, an interval of 00:05:00 means the Rule will fire at the Start Time and every five minutes thereafter until the Stop Time or Stop Count value is reached.</p> <p>The minimum interval is five seconds.</p>
Stop Time	Displays (in hours, minutes, and seconds) at what clock time the Rule should stop firing.
Stop Count	<p>Specifies the number of times the Rule is to be fired from the Start Time.</p> <p>For example, a Stop Count value of 12 means that the Rule will begin firing at the specified Start Time and continue firing (at a rate determined by the Interval field) 12 times.</p>
Fired	<p>Shows how many times the Rule was fired.</p> <p>Scrolling <i>right once</i> displays Job Name, Job Type, Job Class, RACF User-ID, and RACF Group fields (Figure 10-5 on page 10-7).</p>

Figure 10-5 Rule Set Overview Panel—View 5

```

BMC Software ----- Rule Set Overview ----- MAINVIEW AutoOPERATOR
COMMAND ==>
Rule Set ID: AAORULST      Ruleset Strategy ==> FIRST          DATE --- 01/02/01
Primary commands: Add, Save, Sort, Unsort, Reset, Filter      TIME --- 14:21:30
LC CMDS --- (S)elect, (E)nable, (D)isable, (T)est, (DE)lete, (I)nsert
              (C)opy/(CC)opy, (M)ove/(MM)ove, (B)efore or (A)fter, (R)repeat
Sort Criterion:              Filter ENABLED                      right/left
              Job          Job Job  RACF      RACF
LC  Rule-id  Name          Type Class User-ID  Group
-----
___ IS0834I
___ IS0836I1
___ DFS9940
___ IM0001I
___ IMSCHCK
___ RUL00001
___ IS0861I
___ IS0862I
___ IM9218I
***** END OF DATA *****

```

The following list describes the fields on this view of the panel.

Field	Description
Rule-id	Is the one- to eight-character unique ID assigned to this Rule at its creation.
Job Name	Is the name of the originating batch job, TSO user ID, or Started Task defined for this Rule. Blank means any.
Job Type	Is the type of originator defined for this Rule: JOB, STC, or TSO.
Job Class	Is the job class of the job defined for this Rule.
RACF User-ID	Is the user ID defined for this Rule, if RACF or CA-TOPSECRET or ACF2 is installed.
RACF GROUP	Is the name of the RACF Group defined for this Rule.

Using Primary Commands

You can enter the following primary commands on the COMMAND line of the Rule Set Overview panel.

Command	Description
ADD	displays the Rules Processor Detail Control panel
SORT	<p>sorts the display in either ascending or descending order using the field name as the sort field</p> <p>For example:</p> <p>SORT FIRED D</p> <p>sorts the display by Fired count in descending order, thus the Rules that fired most frequently will appear at the top of the display.</p> <p>You can also sort and filter the display based on</p> <ul style="list-style-type: none">• Rule-id• Stat• Text-ID• Type• EXEC• ID <p>The default is Ascending A order for all these fields, except Fired and Changed in which case the default is Descending D.</p>
UNSORT	<p>reverses the Sort command and returns the display to its original order; by physical location of the Rule within the Rule Set</p> <p>This command must be issued before a Move M, Copy C, Repeat R, or Insert can be issued.</p>
RESET	enables you to cancel any pending move or copy line commands that you might have
Filter	<p>enables you to invoke the Rule Set filter panels to specify filtering selection criteria for the Rule Set</p> <p>For more information about Rule Set filtering, refer to “Filtering Events for Rule Sets” on page 9-12.</p>

Using Line Commands

You can use the following line commands in the **LC** column.

Command	Description
Select S	Transfers you directly into the Rule Processor Detail Control panel.
Enable E	Activates a Rule and effectively starts the selection criteria filtering process.
Disable D	Stops the selection criteria filtering process for this Rule.
Test T	Sets the Rule to test mode. Use the Enable or Disable command to get the Rule out of test mode. Using test mode enables you to see if the Rule fires as expected but the actions specified for the Rule are not taken.
DElete DE	Deletes a Rule.
Insert I	Transfers directly into the Rule Processor Detail Control panel to create a new Rule before or after the line against which this command is issued.
Copy C CC	Copies Rules to another location in the Rule Set or to another Rule Set. The Rules can be enabled or disabled. For more information, refer to “Copying or Moving Rules”.
Move M MM	Moves Rules to another location in the Rule Set or to another Rule Set. The Rules can be enabled or disabled. For more information, refer to “Copying or Moving Rules”.
Before B	Indicates the line within the Rule List before which a Rule is copied or moved with the Move M MM or Copy C CC line commands. For more information, refer to “Copying or Moving Rules”.
After A	Indicates the line within the Rule List after which a Rule is copied or moved with the Move M MM or Copy C CC line commands. For more information, refer to “Copying or Moving Rules”.
Repeat R	Creates a Rule using the active pattern of that line. Use this command to create Rules that need only minor modifications rather than re-entering the information for each Rule.

Copying or Moving Rules

Use the Copy and Move commands in the **LC** column for moving/copying single Rules or blocks of Rules:

- To move or copy single Rules, place the **M** or **C** line command next to the Rule in the **LC** column.
- To move or copy blocks of Rules, place **MM** or **CC** line command next to the first and last Rules of a group of Rules.

The move and copy commands must be used in conjunction with the **After | A** and **Before | B** line commands.

You can copy or move Rules either within the same Rule Set or to another Rule Set that is *on the same target*. The Rules can be disabled when you copy or move them.

Copying or Moving Rules within Rule Set

To use the copy or move commands within the same Rule Set, follow these steps:

- Step 1** From the Automation Control Panel, select an ENABLED Rule Set.
- Step 2** From the Rule Set Overview panel, select a Rule or a block of Rules to copy or move.
- Step 3** Place the **Copy | C | CC** or **Move | M | MM** commands next to the Rules in the **LC** column.
- Step 4** Enter either the **After | A** or the **Before | B** line commands depending on where you want to copy or move the Rules to in the Rule Set.
- Step 5** Press **Enter**.

The Rules are copied/moved to the new location.

- Step 6** Press **PF3/END**.

The Confirm Rule Set Modifications panel is displayed.

- Step 7** To save the copied or moved Rules, enter **SAVE**.

The Rules are copied or moved.

Copying or Moving Rules between Rule Sets

To use the copy or move commands between Rule Sets:

- Step 1** From the Automation Control Panel, select an ENABLED Rule Set.
- Step 2** From the Rule Set Overview panel, select a Rule or a block of Rules to copy or move.
- Step 3** Place the **Copy | C | CC** or **Move | M | MM** commands next to the Rules in the **LC** column.
- Step 4** Press **PF3/End** to return to the Automation Control panel.
- Step 5** Select the Rule Set (on the same target) to copy or move the Rules to.
- Step 6** On the Rule Set Overview panel, enter the **After | A** or **Before | B** line commands depending on where you want to copy/move the Rules from the first Rule Set to this Rule Set.

This Rule Set must have at least one Rule already in it where you can enter the **After | A** or **Before | B** line commands.

- Step 7** Press **Enter**.

The Rules are copied/moved to the new location.

- Step 8** Press **PF3/END**.

The Confirm Rule Set Modifications panel is displayed:

- If you are copying Rules, entering **SAVE** saves the Rules to the copied to Rule Set and leaves a copy in the copied from Rule Set.
- If you are moving Rules, entering **SAVE** saves the Rules to the moved to Rule Set and removes them from the moved from Rule Set.

- Step 9** To save the copied or moved Rules, enter **SAVE**.

The Rules are copied or moved.

If you choose to cancel any pending moves or copies, use the Reset primary command.

Chapter 11 Managing by Exception: Using MAINVIEW AutoOPERATOR ALERTs

This chapter provides

- an introduction to ALERTs and your data center
- an overview to using the MAINVIEW AutoOPERATOR ALERT Management Facility
- discussions for using the applications in the ALERT Management Facility for
 - obtaining statistical ALERT information
 - displaying ALERT data graphically
 - showing ALERTs in text format

To create MAINVIEW AutoOPERATOR ALERTs, you must use either the IMFEXEC ALERT statement in CLISTs or REXX EXECs, or the MAINVIEW AutoOPERATOR Rules that generate ALERTs in response to automation events occurring in the system. For information about how to create ALERTs, refer to Table 11-1 on page 11-4.

Introduction

The following sections discuss general topics such as

- what are some problems in message management
- how MAINVIEW AutoOPERATOR has solutions to these problems by providing
 - automation and ALERT generation with the MAINVIEW AutoOPERATOR Rules Processor
 - ALERT management features in the ALERT Management Facility

What Are the Problems?

Today's data center operations personnel are inundated with information from MVS consoles, IMS logs, CICS system transient data (TD) queues, various system monitors, and so on. Messages also arrive to different physical locations. Of all these messages, only a small percentage might require operator attention and intervention.

Solutions

Following are some possible solutions.

Message Suppression

One of the first things you can do is implement message suppression with the MAINVIEW AutoOPERATOR Rules Processor applications. By decreasing the overall number of messages, important messages can be seen easily.

Console Consolidation

Console consolidation (reducing the number of physical terminals associated with the information providers) is the next step. Potentially, all sources could route important messages to a single terminal and utilize the MAINVIEW AutoOPERATOR Logging Facility. However, operations personnel often are responsible for different areas of the systems. For example, Network, DASD, OS/390, or subsystem operators generally deal with issues that are specific to a particular area.

A better situation is one where message traffic from all the different sources are categorized and routed to the appropriate personnel. The MAINVIEW AutoOPERATOR ALERT Management Facility makes this situation possible.

Management By Exception

With MAINVIEW AutoOPERATOR ALERTs and the ALERT Management Facility, you can implement something that is commonly referred to as “Management by Exception”.

The ALERT Management Facility helps you to

- filter the messages originating from the many sources
- classify and categorize information with priorities
- create subclasses of information for those individuals handling the messages

The ALERT Management Facility provides the following features:

- message interception and classification
- generation of ALERTs containing the original (or reworded text) associated with routing and priority characteristics
- flexible display facilities that allow controlled subsets of this information to be displayed

The ALERT Management Facility also provides ALERTs that continue to exist across BBI-SS PAS restarts and MVS IPLs or can be customized to escalate in severity over time.

Overview to the ALERT Management Facility

The following sections contain discussions that introduce important concepts about MAINVIEW AutoOPERATOR ALERTs and the ALERT Management Facility.

What ALERTs Are

An MAINVIEW AutoOPERATOR ALERT consists of a number of components both textual (visible) and user-specified (machine accessible). MAINVIEW AutoOPERATOR ALERTs are messages that MAINVIEW AutoOPERATOR creates to notify operators of exceptional situations that might require manual intervention and attention.

MAINVIEW AutoOPERATOR ALERTs can originate from

- MAINVIEW AutoOPERATOR Rules Processor
- MAINVIEW AutoOPERATOR CLIST or REXX EXECs
- NetView address space issuing the NAIEXEC ALERT command

The way an ALERT looks and functions depends on what you specify when the ALERT is created from any of these sources.

For documentation about how ALERTs are generated from these sources, refer to Table 11-1.

Table 11-1 Where to Find More Information about ALERTs

To Read About	See
Creating ALERTs based on various system events with MAINVIEW AutoOPERATOR Rules “Creating Rules for Events: Using the Rule Creation Panels” on page 6-1 contains complete information about how ALERTs are created from a Rule.	Chapters 3 through 11 in this manual
Creating ALERTs from MAINVIEW AutoOPERATOR CLIST EXECs	<i>MAINVIEW AutoOPERATOR Advanced Automation Guide</i>
Creating ALERTs from MAINVIEW AutoOPERATOR REXX EXECs	<i>MAINVIEW AutoOPERATOR Advanced Automation Guide</i>
Creating ALERTs from the NetView address space	“MAINVIEW AutoOPERATOR ACCESS NV” section in the <i>MAINVIEW AutoOPERATOR Options User Guide</i>

In addition, MAINVIEW AutoOPERATOR maintains information about

- the date and time ALERTs originated
- where the ALERTs originated from
- the ALERT's priority and color
- the ALERT's queuing characteristics
- target user information
- any user-specified data associated with a particular ALERT

How ALERTs Are Kept

ALERTs reside in *queues*. At any one time, there can be only one ALERT with a particular key in a particular queue. This means that the queue identifier, together with the ALERT key, uniquely identify an ALERT.

Regardless of the source of an ALERT, one attribute of an ALERT which must be specifically defined for each ALERT is the ALERT key. The key is the attribute which allows an ALERT to be distinguished from other ALERTs.

A new ALERT created with the same queue and key identifier replaces an existing ALERT with the same queue and key identifier.

Where ALERTs Are Stored

ALERTs are maintained in extended storage private to a MAINVIEW AutoOPERATOR-SS but can be routed from one subsystem to another. In this case, the receiving subsystem may be classified as a focal point of the ALERTs from both systems.

How to Display ALERTs

The ALERT Management Facility provides three different applications to enable you to display ALERTs in several ways:

- The ALERT Overview Statistics application shows a general breakdown of all ALERT queues with the corresponding number of ALERTs by priority and storage usage.
- The ALERT Overview application is a graphical display of the number of ALERTs in user-specified queues.

- The ALERT Detail application provides the actual text content of selected ALERTs.

The ALERT Overview Application panels can be modified by using their profile panels. With the profile panels, you can specify that only the information pertinent to a particular user or user-group be shown on the panel.

What ALERTs Can Do

MAINVIEW AutoOPERATOR ALERTs are programmable. You can create ALERTs that enable you to have automatic execution of follow-up EXECs (also known as ALERT-initiated EXECs) to take automation steps as a result of the ALERT.

You also have the option of associating additional Help information with an ALERT, which enables you to retrieve specific information about an individual problem from an ALERT.

The interaction of ALERTs with other BMC Software products, such as the various online monitors, can be tailored so that they provide additional information for the ALERT without you having to be aware of the underlying details.

Where to Go from Here

Once ALERTs are created (either from Rules, EXECs, or NetView), you can use the ALERT Management Facility, which is documented in this chapter, to manage ALERT functions with different ALERT applications.

Obtaining Statistical ALERT Information: ALERT Queue Statistics Application

This application provides information about all ALERT queues active in the MAINVIEW AutoOPERATOR subsystem addressed by the TGT field. The main portion of the panel shows a scrollable listing of

- the individual queues
- the number of ALERTs contained within the queues broken up by priority

- the sum of all ALERTs within each queue
- information about the amount of storage consumed

Use the information presented here to gain an understanding of what the storage requirements for ALERTs are to fine-tune the parameters in the BBPARM member AAOALS00. For more information, refer to the chapter for the Dynamic Parameter Manager in the *MAINVIEW AutoOPERATOR Customization Guide*.

Select Option 0 from the ALERT Management Facility menu to invoke the ALERT Queue Statistics application as shown in Figure 11-1:

Figure 11-1 ALERT Queue Statistics Panel

```

BMC Software ----- ALERT Queue Stats ----- MAINVIEW AutoOPERATOR
COMMAND ==>
Interval ==> 1
Status --- INPUT
(S)elect (Del)ete

----- Counts -----
Cmd Queue Clrng Info. Warn Minor Major Crit. Total Total Avg.
Size Size
--- NETWORK 0 0 1 0 0 0 0 1 206 206
--- MVS 0 0 0 0 1 0 0 1 233 233
--- IMS 0 0 1 0 0 0 0 1 222 222
--- DASD 0 0 0 0 0 1 1 221 221
--- CICS 0 0 1 1 0 0 2 419 209
--- A B 1 0 0 0 0 0 1 205 205
***** END OF QUEUES *****

```

This application provides an overview of all ALERT activity and is designed for use by the automation specialist who develops site-specific solutions involving ALERT management. It may also serve as a diagnostic tool and a quick shortcut when, for example, a test queue with hundreds of ALERTs needs to be cleared.

The ALERT Queue Statistics application is the only online application that gives you a complete picture of all the ALERT queues. It can provide you with information about unexpected ALERT queues, such as an ALERT queue caused by an EXEC gone awry.

Panel Description

The following describes the fields on the panel.

Field	Contents
Queue	Name of the ALERT queue that the information on this line applies to.
CLRNG	Number of ALERTs in this queue prioritized as CLEARING.
INFO	Number of ALERTs in this queue prioritized as INFORMATIONAL.
WARN	Number of ALERTs in this queue prioritized as WARNING.
MINOR	Number of ALERTs in this queue prioritized as MINOR.
MAJOR	Number of ALERTs in this queue prioritized as MAJOR.
CRIT	Number of ALERTs in this queue prioritized as CRITICAL.
TOTAL	Total number of ALERTs in this queue. For example, the sum of ALERTs in the CLRNG, INFO, WARN, MINOR, MAJOR, and CRIT queues.
TOTAL SIZE	Total amount of storage in bytes consumed by all ALERTs in this queue.
AVG. SIZE	Average size of one ALERT in this queue expressed as TOTAL SIZE / TOTAL.

Line Commands

Line commands that you can enter in the input fields are as follows:

Command	Function
Select S	Invokes the ALERT Detail Application displaying all ALERTs in the indicated queue
DELeTe DEL	<p>Deletes all ALERTs in the indicated queue and removes the queue itself</p> <p>Deleting all ALERTs contained in a particular queue from the ALERT Detail panel does not cause the actual queue headers to be removed.</p> <p>The queue name itself may still be retrieved using the IMFEXEC ALERT FUNCTION(LISTQ) command. This application represents the only means to interactively remove the ALERT queue header itself.</p>

Primary Commands

Primary commands that you can enter on the **COMMAND** line are as follows:

Command	Function
Sort	<p>Sorts the ALERT queues shown by any of the column headings in either ascending or descending sequence</p> <p>This command has 2 parameters: the first is required, the second is optional.</p> <ul style="list-style-type: none">• The first parameter specifies a column heading name. The following names may be used:<ul style="list-style-type: none">• QUEUE• CLRNG• INFO• WARN• MINOR• MAJOR• CRITICAL• TOTAL• TOTSIZE• AVGSIZE <p>The default is QUEUE.</p> <ul style="list-style-type: none">• The second parameter specifies the sort order, for example, Ascending (A) or Descending (D); for example: <p><code>SORT TOTSIZE A</code></p>

To display the panel, select Option 1 from the ALERT Management Menu to display the ALERT Overview application:

```
BMC Software ----- ALERT OVERVIEW ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                TGT ==> CHICAGO
INTERVAL ==> 2                             DATE --- 01/03/30
STATUS   --- INPUT                         Profile suffix ==> 00    TIME --- 09:33:34
```

MVS	DASD	NETWORK	IMS*	CICS	MAIN
(1)	(4)	(2)	(2)	(3)	(5)
					555555
	444444				333333
	222222			444444	222222
	111111	444444	666666	444444	222222
222222	111111	222222	444444	333333	111111

Critical-1 Major-2 Minor-3 Warning-4 Informational-5 Clearing-6

The display can contain up to six bar graphs or queues. These sections are either color-coded (on terminals supporting reverse video) or represented by a number series.

How Bar Graphs Are Scaled

A line or set of lines within a bar graph represents the number of ALERTs with specific priority within the queue. Each bar graph is constructed from bottom to top with the ALERTs of the highest priority appearing on the bottom of the panel. The bar graphs are automatically scaled using the following rules:

- All bar graphs on the panel are scaled by the same factor.
- The factor is calculated as a divisor that allows the tallest bar graph (that is, the largest queue) to fit into the constraints of the physical terminal.
- However, if the divisor would cause any section (representing the number of ALERTs with a particular priority) to be dropped from the panel, the bar graph is adjusted so that the smallest section will still be displayed, possibly causing the bar graph to extend beyond the screen window and be truncated.

The last rule ensures that, even though a queue may contain a large number of ALERTs with a lesser priority and only a few with a high priority, the section related to the ALERTs with a high priority will still be visually represented.

How Colors and Numbers Are Used

The following table shows the correlation of digits and colors of the ALERTs to the priority of the ALERTs. The colors will be correctly represented only on a terminal supporting extended attributes.

Also, the colors shown here are strictly related to priorities and not the colors associated with the ALERTs themselves. ALERTs may have color attributes associated with them at creation time; these colors are shown only in the ALERT Detail application.

Color	Digit	Priority
Red	1	Critical
Pink	2	Major
Yellow	3	Minor
Dark Blue	4	Warning
Light Blue	5	Informational
Green	6	Clearing

The following fields are shown on the ALERT Overview panel:

Field	Contents
Command	Standard command input field for BBI global or application specific commands
Interval	Screen refresh interval when issuing GO command
Status	Indicator to show whether the application has been entered into automatic screen refresh: <ul style="list-style-type: none">• Input: Application accepts input• Running: Application is in auto-refresh mode
Profile Suffix	Profile suffix used to construct panel Use the SET primary command or overtype this value to select a different configuration. To construct a new setup, simply enter a new suffix. You will be prompted for the required values.

The ALERT Overview Application processes some commands that are cursor-position sensitive. By placing the cursor within the display and into the column for a queue (the exact location is not relevant), certain primary commands can be issued in relation to a particular queue.

These primary commands are assigned to a queue on the ALERT Overview Profile panel, which is discussed in “Using a Profile” on page 11-14.

The primary commands are as follows:

Command	Function
EXPAND	invokes the ALERT Detail Application showing the textual content for this ALERT queue or queue group (Requires cursor positioning.) Refer to “Showing ALERTs in Text Format: Using the ALERT Detail Application” on page 11-16. Note: The EXPAND command is designed to be assigned to program function keys and act as a hot-key rather than to be explicitly entered on the COMMAND line.
TRANSFER	executes the primary command sequence defined in the profile for this queue (Requires cursor positioning.) Note: The TRANSFER command is designed to be assigned to program function keys and act as a hot-key rather than to be explicitly entered on the COMMAND line.
SET	selects a different or new profile to configure the panel To construct a new profile, enter a new suffix. You will be prompted for the required values.

Command	Function
PROFILE	invokes the profile setup for the suffix currently active (for example, entered in the field labeled Profile suffix) The panel shown on page 11-14 is displayed.
GO	places the application into screen refresh Press the PA1 or Attention key to exit this mode.

Displaying Hierarchical Arrangement of Overview Applications

By using a combination of primary commands and application transfer commands, you can create a hierarchical arrangement of panels that show differing levels of ALERT queue information.

For example, you can create one Overview panel that displays ALERTs of *several different queues in one bar graph*, and then you can have a secondary Overview panel that displays each of those different queues with its own bar graph.

When using a combination of the primary commands (TRANSFER and SET) and the application transfer command ALE, you can create a secondary Overview panel by

- using an initial profile and having each bar chart represent groups or categories of queues

For example, you can have a queue named CICS. On the Overview panel, the bar graph for CICS represents a summary of several queues of ALERTs for active CICS systems at a site.

- assigning a primary command that invokes another profile suffix under a new application level; for example, ALE;SET xx, where xx is a new profile suffix

The queue named CICS is expanded. The individual queues are displayed in the new panel. For example, the new panel displays each of the individual queues with CICS-related ALERTs and with a bar graph for each queue.

This approach enables you to zoom into problem areas simply by positioning the cursor into a bar of the graph and pressing a PF key that has been assigned the command string TRANSFER.

By implementing a new application level, the underlying information is saved and the summary profile will be redisplayed when you press **PF3**.

Using a Profile

A profile application drives the Overview application and determines which ALERT queues are displayed and which primary commands are associated with each queue.

The ALERT Overview Application must be configured using a profile before it can be used. The profile determines which ALERT queues are shown. To display the ALERT Overview Profile panel, issue the command **PROFILE** on the **COMMAND** line. An example of the panel is shown in “Overview to the ALERT Management Facility”.

Figure 11-3 ALERT Overview Profile Application Panel

BMC Software ----- ALERT OVERVIEW PROFILE ----- MAINVIEW AutoOPERATOR		
COMMAND ==>		
	Profile suffix 00	DATE --- 01/03/08
		TIME --- 09:33:54
NAME ==> MVS	PCMD ==> MAO;STATUS	
NAME ==> DASD	PCMD ==>	
NAME ==> NETWORK	PCMD ==>	
NAME ==> IMS*	PCMD ==>	
NAME ==> CICS	PCMD ==>	
NAME ==> MAIN	PCMD ==>	
Press END to SAVE Profile and return to application		

This panel allows the specification of up to six queue names or queue name patterns. Optionally, any MAINVIEW AutoOPERATOR application transfer may be entered in the fields labeled PCMD to the right of the queue names. The specified command is executed when, in the ALERT Overview Application, the cursor is positioned into the corresponding queue's area and the TRANSFER command is issued.

As an example, you might be monitoring ALERTs pertaining to a specific CICS system. Once a problem is indicated on the ALERT Overview Display, you may use the TRANSFER feature to directly transfer into a MAINVIEW for CICS session that shows technical details involving this CICS system.

All commands that can be processed on the **COMMAND** line of the ALERT Overview Application when the session is run under TSO, VTAM, or EXCP mode may be specified in the PCMD field.

The information on this panel is automatically saved when you press the **PF3** key. Enter **CANCEL** on the **COMMAND** line to discard any changes.

You can also specify that a command is executed on a remote system by specifying **SYSTEM** and a remote BBI-SS PAS target. For example, if you specify

PCMD ===> CICS;EX TRAN

the TRAN command will be executed against the current default target for CICS.

If you specify

PCMD ===> CICS;EX TRAN;SYSTEM CICS

the TRAN command will be executed against the CICS target CICS, which is the name of a remote CICS target.

Showing ALERTs in Text Format: Using the ALERT Detail Application

Selecting Option 2 from the ALERT Management Menu, issuing the **EXPAND** primary command in the ALERT Overview Application, or using the **Select | S** line command in the ALERT Overview Statistics application causes the following panel to be invoked:

Figure 11-4 ALERT Detail Application Panel

```

BMC Software ----- ALERT DETAIL -----
COMMAND ==>
INTERVAL ==> 3      Suffix ==> 00      COL.  0 - 53      TGT ==> CHICAGO
STATUS  --- INPUT      Queue(s) ==> NETWORK      DATE --- 01/03/28
TIME --- 11:44:41

RSP TIME  IND ORIGIN  ----- Sorted by QUEUE
___ 11:44 ech DETROIT  AMF001I - INITIATOR NOT AVAILABLE FOR FINANCE PRODUCT
___ 11:44 eh  DETROIT  AMF020E - LINES DOWN:
                        - BERLIN
                        - CHICAGO
___ 11:44 h   CHICAGO  ALM0100 8100 COMMUNICATION LINE DOWN:
                        -CHI998A21
___ 11:43    CHICAGO  COMMUNICATION LINES DOWN:
                        - DALLAS
                        - CHICAGO
___ 11:43 e   CHICAGO  COMM CONTROLLER HAS I/O ERROR
                        ***** END OF ALERTS *****

```

While the other ALERT applications display information regarding the counts of ALERTs (in effect, providing an abstract picture of the general health of a system), this application enables you to display the nature of a problem. It provides a scrollable listing of the textual content of all ALERTs or a subset of ALERTs present in the target MAINVIEW AutoOPERATOR-SS.

The text is formatted according to the line feed and color instructions provided during ALERT generation.

The fields on this panel are

Field	Contents
Interval	Rate in seconds in which the contents of this panel will be refreshed if placed into auto-refresh using the GO primary command.
Suffix	<p>Profile suffix used to construct panel.</p> <p>Use the SET primary command or overwrite this value to select a different configuration. To construct a new setup, enter a new suffix. You will be prompted for the required values.</p>
Col.	<p>Columns of ALERT text displayed.</p> <p>The first value can be typed over, thus effectively scrolling the text horizontally. The second value is automatically computed from the first.</p>
Status	<p>Indicator whether application has been entered into screen refresh:</p> <ul style="list-style-type: none"> • Input: Application accepts input • Running: Application is in screen refresh
Queues	<p>Input field accepting overrides for the standard profile backing this application.</p> <p>If any contents are present in this field, they take precedence, thus temporarily disabling the profile. Valid input values are queue names and queue name patterns.</p>
Rsp	<p>Response action field for the ALERT it precedes.</p> <p>It serves two different functions:</p> <ul style="list-style-type: none"> • Allows you to delete the indicated ALERT by erasing the underscores and pressing Enter • Allows you to enter up to 3 characters in this field and, when you press Enter, a follow-up EXEC is scheduled (if one was specified at ALERT creation) • The 3 characters get passed to the EXEC as a positional parameter.
Time	Time the ALERT was issued
Ind	<p>ALERT contents indicator:</p> <ul style="list-style-type: none"> • E: Follow-up EXEC is available (EXEC keyword was specified at ALERT creation) • C: Command transfer is available (PCMD keyword was specified at ALERT creation) • H: ALERT specific help is available (HELP keyword was specified at ALERT creation) <p>When a help panel is associated with an ALERT, the help text member must be included the BBPLIB concatenation for the terminal session.</p>

Field	Contents
Origin	<p>Origin associated with this ALERT.</p> <p>The origin of an ALERT is one of the following:</p> <ul style="list-style-type: none"> • For EXEC-initiated ALERTs: the default value is the originating EXEC's IMFSYSID; for example, the originating job name for the EXEC • For Rule-generated ALERTs: the default value is the subsystem identifier of the subsystem the ALERT was created on • For either EXEC or Rule generated ALERTs: the origin may be explicitly specified through the ORIGIN keyword at ALERT creation
Sorted by	<p>Input field designating the sort order in which the ALERTs on this panel are shown.</p> <p>Acceptable values are TIME and QUEUE, and PRIORITY. When sorted by TIME, all ALERTs are shown by creation time in descending order (the ALERTs created most recently appear at the top of the listing).</p> <p>When sorted by QUEUE, all ALERTs are sorted by a combined key of queue and time. In other words, the ALERTs within a queue appear grouped together and sorted within the queue again by time.</p>

The application supports the following specific primary commands:

Command	Function
PROFILE	<p>Invokes the profile setup for the suffix currently active (in other words, entered in the field labeled Profile suffix).</p> <p>The panel shown in Figure 11-5 on page 11-19 will be displayed.</p>
TRANSFER	<p>Performs the command transfer specified for a particular ALERT.</p> <p>This command requires the cursor to be placed within the text area of an ALERT that bears a C in the Ind. column, indicating for this ALERT a command association is present.</p> <p>The TRANSFER command is designed to be assigned to program function keys and act as a hot-key rather than to be explicitly entered on the COMMAND line.</p>
EXPAND	<p>Retrieves and displays help information associated with a particular ALERT.</p> <p>This command requires the cursor to be placed within the text area of an ALERT that bears an H in the Ind. column, indicating help information is present for this ALERT.</p> <p>Note: The EXPAND command is designed to be assigned to program function keys and act as a hot-key rather than to be explicitly entered on the COMMAND line.</p> <p>When a help panel is associated with an ALERT, the help text member must be included the PNLLIB concatenation for the terminal session.</p>

Command	Function
SET	Selects a new profile to define the subset of ALERTs displayed. To construct a new setup, enter a new suffix. You will be prompted for the required values.
GO	Places the application into screen refresh. Press the PA1 or Attention key to exit this mode.
DETAIL	Displays all information associated with a particular ALERT. This command requires the cursor to be placed within the text area of an ALERT.

Using a Profile

A profile application drives the ALERT Detail application and enables you to restrict the ALERTs shown on the ALERT Detail panel. An example of an ALERT Detail Profile panel is shown in Figure 11-5.

Figure 11-5 ALERT Detail Profile Panel

```

BMC Software  ----- Alert Detail Profile ----- MAINVIEW AutoOPERATOR
COMMAND ==>

                                Date --- 01/03/28
                                Time --- 12:07:43

        Profile suffix 00

Specify INCLUDE(s) below:

User      ==> *           / *           / *           / *
Queue     ==> *           / *           / *           / *
Target    ==> *           / *           / *           / *
Priority   ==> *           / *           / *           / *

Specify EXCLUDE(s) below:

User      ==>           /           /           /
Queue     ==>           /           /           /
Target    ==>           /           /           /
Priority   ==>           /           /           /

Initial Alert sort order ==> PRIO      ( QUEUE, TIME or PRIO )

Enter CANCEL to cancel, END to save

```

Up to four patterns each may be specified for the ALERT fields USER, QUEUE, TARGET, and PRIORITY. Only ALERTs matching at least one of the four criteria for each category become eligible for display.

Field Name	Description
User	Is the one- to eight-character name of the user ID the ALERT is addressed to; for example, a one- to eight-character TSO user ID.
Queue	Is the name of the queue to access or into which to place the ALERT.
Target	Is the target associated with a single MAINVIEW AutoOPERATOR only. It is not possible to display the ALERTs from multiple MAINVIEW AutoOPERATORS on the same ALERT Detail panel. To see ALERTs from another MAINVIEW AutoOPERATOR, create a different profile using target definitions from that MAINVIEW AutoOPERATOR.
Priority	Is the priority of the ALERT.

For example, you can specify one of the following priorities for an ALERT:

CRITICAL(RED)

MAJOR(PINK)

MINOR(YELLOW)

WARNING(DKBLUE)

INFORMATIONAL(LTBLUE)

CLEARING(GREEN)

These fields also are described as keywords for the IMFEXEC ALERT command statement in the *MAINVIEW AutoOPERATOR Advanced Automation Guide*. Refer to this discussion to learn how to create and construct MAINVIEW AutoOPERATOR ALERTs.

Use the area under **Specify INCLUDE(s) below** to list the ALERTs that you want to display on the ALERT DETAIL panel.

Use the area under **Specify EXCLUDE(s) below** to list the ALERTs that you want to exclude from being displayed on the ALERT DETAIL panel. For example, you may have specified that ALERTs will be published to PATROL Enterprise Manager (PATROL EM) consoles but you might not necessarily want to see these ALERTs displayed on the ALERT DETAIL panel. You can use these EXCLUDE fields to specify that those ALERTs will not be displayed on the ALERT DETAIL panel while they are still being sent to PATROL EM consoles.

In addition to specifying eligibility criteria, this panel defines the initial sort order in which the selected ALERTs are shown. The contents of the fields in Figure 11-5 on page 11-19 preset the contents of the corresponding field on the ALERT Detail panel.

Getting Extended Help

When using the EXPAND primary command to retrieve extended Help information associated with an ALERT, a scrollable listing of the associated data set member is shown.

Figure 11-6 is an example of a possible panel:

Figure 11-6 ALERT Help Information (Extended ALERT Text) Panel

```

BMC Software ----- Extended ALERTs ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                     TGT ==> SYSC
                                                DATE --- 01/03/30
                                                TIME --- 13:20:57

TIME  IND ORIGIN -----
11:44 ech DETROIT AMF001I - INITIATOR NOT AVAILABLE FOR FINANCE PRODUCTION
***** EXTENDED ALERT TEXT *****
AMF001I - Initiator not available for FINANCE production

This ALERT is issued only when there was an error detected in
in the FINANCE backup job series - FIN11jj. Where 11 is the
datacenter location and jj is the job number in the backup series.

PROBLEM DETERMINATION:

Review the job run book for the FINANCIAL backup procedures.
Pay particular attention to the section on NON-ZERO return codes.

ACTION:

If the return code is one that provides WARNING information,
place the cursor on the ALERT and press the TRANSFER key. This
will start the necessary INITIATORS to run the FINANCIAL

```

When a Help panel is associated with an ALERT, the Help text member must be included the BBPLIB concatenation for the terminal session.

Viewing ALERT Detail Information

To see all information pertinent to a single ALERT, which is particularly useful for debugging purposes, follow these steps:

- | | |
|---------------|--|
| Step 1 | Enter the DETAIL primary command on the COMMAND line of the ALERT Detail panel. |
| Step 2 | Position the cursor on the ALERT that you want to investigate. |
| Step 3 | Press Enter . |

A panel similar to Figure 11-7 is displayed:

Figure 11-7 ALERT Detail Information Panel

```

BMC Software ----- ALERT detail information ----- MAINVIEW AutoOPERATOR
COMMAND ==>
Time      : 12:36:02           Date: 30-MAR-01           Help: AMF001I
Origin    : DETROIT           System ID: RE1X           Alarm: NO           Tgt switch: NO
Priority  : MAJOR              User: RAE1             Color: PINK         Retain: YES
Queue     : MVS               Target: RE1X           Creator: EXEC / DEMOALRT
Key       : MVS
Text      : AMF001I - INITIATOR NOT AVAILABLE FOR FINANCE PRODUCTION      :
      :                               :
      :                               :
      :                               :
EXEC      : ALRTINIT           :
      :                               :
      :                               :
      :                               :
Command   : #$$SI25           :
      :                               :
      :                               :
      :                               :
User data:                     :
      :                               :
      :                               :
      :                               :
Hit ENTER to view rest of Alert detail or END to exit

```

- Step 4** Press **Enter** to display the next panel.

Figure 11-8 ALERT Detail Information Panel: Secondary Panel

```

BMC Software ----- ALERT detail information (cont) ----- MAINVIEW AutoOPERATOR
COMMAND ==>
Disposition :
Escalation intervals 1 :
Escalation intervals 2 :
Escalation intervals 3 :
Escalation intervals 4 :
Escalation intervals 5 :
Escalation intervals 6 :
Escalation direction :
Escalation EXEC/parms :
:
:
:
:
Enter END to return to previous panel

```

These panels show all the parameters that can be associated with an ALERT when an ALERT is created either in the Rule Processor or the IMFEXEC ALERT command.

The following table describes the fields on the primary panel:

Field	Contents	Associated IMFEXEC Keyword
Time	Time the ALERT was created	N/A
Date	Date the ALERT was created	N/A
Help	Name of any associated help member (retrieved using EXPAND command) When a help panel is associated with an ALERT, the help text member must be included the BBPLIB concatenation for the terminal session.	HELP
Origin	Origin of the ALERT (the default origin is subsystem from where the ALERT was issued)	ORIGIN
System ID	The subsystem identifier (SSID) where the ALERT originated from	N/A
Alarm	Indicates whether or not the ALERT is accompanied by a warning beep	ALARM
Tgt switch	Indicates whether or not target switching was specified for a PCMD that was associated with the ALERT	SYSTEM
Priority	ALERT priority	PRIO
User	ALERT target user	USER

Field	Contents	Associated IMFEXEC Keyword
Color	Color in which ALERT should be displayed	COLOR
Retain	Indicates whether or not the ALERT is coded to be retained between restarts of the BBI-SS PAS	RETAIN
Queue	Queue in which the ALERT resides	QUEUE
Target	ALERT subsystem target (the default is subsystem where ALERT originated)	TARGET
Creator	Programmatic origin of the ALERT; can be as a result of an EXEC or a RULE. <ul style="list-style-type: none">• If created by an EXEC, the indicator EXEC is followed by the name of the EXEC.• If created by a Rule, the indicator RULE is followed by the identifier of the Rule.	N/A
KEY	ALERT identifier for retrieval reference positional parameter	KEY
TEXT	ALERT text displayed in ALERT Detail application positional parameter	TEXT
EXEC	Name of follow-up EXEC and any parameters	EXEC
Command	Associated command	PCMD
User Data	Display user-defined data associated with the ALERT. The contents can be retrieved using the READQ function	UDATA

The following describes the fields on the secondary panel. Note that the basic information relating to the ALERT is repeated at the top of the panel.

Field	Contents	Associated IMFEXEC keyword
Disposition	Disposition of the ALERT after the final interval elapses.	DISPOSE
Escalation Intervals 1 through 6	<p>Allows you to see the user-specified time periods over which ALERTs can either increase or decrease in severity.</p> <p>When you create an ALERT, you can specify up to six separate intervals of time over which the priority of the ALERT can be changed. When the final priority is reached, the action specified by the DISPOSE parameter is taken.</p> <p>For more information about creating ALERTs, refer to Table 11-1 on page 11-4.</p>	INTERVAL
Escalation Direction	<p>Shows whether the ALERT will escalate in severity (UP) or be downgraded (DOWN) in severity.</p> <p>Default is UP.</p>	ESCALATE
Escalation EXEC/parms	Shows the name of an EXEC and any additional parameters that will be invoked when the ALERT reaches its final priority level.	ESCEXEC

When you are viewing ALERT detail information for ALERTs created before MAINVIEW AutoOPERATOR release 4.1, these fields will display N/A.

Chapter 12 Monitoring Automation with the Automation Reporter

This chapter provides

- an introduction to monitoring automation with the Automation Reporter
- additional discussions about the Automation Reporter application that include
 - how to activate the Automation Reporter with the Dynamic Parameter Manager application
 - how to set timed intervals
 - how to set the data offload interval
 - what the data looks like and how to read it

Important
To use the Automation Reporter application, you must implement and activate the REXX/370 Alternate library. For more information about implementing the REXX/370 Alternate library, refer to the <i>MAINVIEW AutoOPERATOR Customization Guide</i> .

Introduction: What the Automation Reporter Application Does

The Automation Reporter application, once activated, tracks and collects data (in numerical values) for automation activities and the consumption of resources over user-specified time intervals.

An automation *activity* can be the

- number of TS users logged on during a time interval
- number of ALERTs created during a time interval
- number of ALERTs still active at the end of the time interval
- number of events that occurred

A *resource* is anything a program needs to complete its task, such as CPU or virtual storage. Many resources are shared between several tasks, so it is important to minimize use and potential contention for resources between tasks.

Collecting data for these activities and resources (also collectively called data items) allows you to measure how efficiently the automation you have implemented is performing on your system over time.

You can store the collected data in a sequential data set. By storing the data in a data set, you can import the data into a report generator or a spreadsheet tool and create reports to demonstrate how much automation you have in place on your system.

“What Kind of Data Is Collected” on page 12-16 briefly describes the activities and resources that can be measured. “How to Activate the Automation Reporter” provides an overview as to how the Automation Reporter is activated.

How to Activate the Automation Reporter

Activation of the Automation Reporter is accomplished through the MAINVIEW AutoOPERATOR application Dynamic Parameter Manager. The Dynamic Parameter Manager (DPM) is a panel-driven application that allows you to view or modify parameters in BBPARM members from a BBI-TS session.

The BBPARM members currently supported by DPM are as follows:

AAOEXPxx	MAINVIEW AutoOPERATOR EXEC-related parameters
AAOALSxx	MAINVIEW AutoOPERATOR ALERT thresholds
AAOARPxx	Automation Reporter-related parameters
AAOTSPxx	TapeSHARE for MAINVIEW AutoOPERATOR-related parameters.

The AAOARPxx member is the one that controls the Automation Reporter and it is where you specify information such as

- *Time interval* at which the Automation Reporter is to record data about automation resources and activities

For example, you can specify that the Automation Reporter records data every 15 minutes or every 1440 minutes (once a day). If you specify 15 minutes, then every 15 minutes the Automation Reporter records the information for the resources and activities as they exist at the end of the interval.

- *Offload interval* which determines how often the collected data is moved to a preallocated sequential data set

For example, you can specify that the offload interval is once an hour (minimum) or once a day (maximum) and the collected data will be written to a sequential data set you have preallocated.

- *Name of the preallocated sequential data set* that the collected data is moved to

You must preallocate a sequential data set and enter its name into DPM. At the offload interval, the collected data is written into this data set.

- *Disposition* of the sequential data set

You can specify whether the sequential data set you allocated is going to have a disposition of MOD or SHR.

- MAINVIEW AutoOPERATOR *ALERT queue name* where Automation Reporter ALERTs are queued

Any MAINVIEW AutoOPERATOR ALERTs generated by the Automation Reporter will be routed automatically to the ALERT queue name you specify here.

For more information about activating the Automation Reporter and specifying these parameters, refer to “Activating the Automation Reporter with the Dynamic Parameter Manager.”

Note: For information about the other BBPARM members that the DPM allows you to edit, refer to the *MAINVIEW AutoOPERATOR Customization Guide*.

Activating the Automation Reporter with the Dynamic Parameter Manager

This section describes all the steps you must go through to start (and stop) the Automation Reporter application. The Automation Reporter application is controlled by parameters in BBPARM member AAOARPxx which you can access through the Dynamic Parameter Manager. Use these parameters to

- specify a user-allocated sequential data set name and the disposition of the data set
- specify the interval at which the Automation Reporter is supposed to record data
- specify the offload interval at which the data is actually written to the data set
- specify the name of an MAINVIEW AutoOPERATOR ALERT queue where any MAINVIEW AutoOPERATOR ALERTs are routed

Step 1: Accessing the Automation Reporter Parms Panel in the DPM Application

1. From the MAINVIEW AutoOPERATOR Primary Option Menu, select Option 9 Online AOPARM Administration to access the Dynamic Parameter Manager application.

The following panel is displayed:

```

BMC Software ----- Dynamic Parameter Manager ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT ===> MS@1
Primary command: Add                               DATE --- 01/03/28
                                                    TIME --- 10:01:49

LC CMDS --- (S)elect, (A)ctivate

  Cmd   Member          Lib VV.MM   Created      Changed      Size   ID
  ---   -
  _   AAOALS00           1  01.04  97/02/07  01/03/26 13:07    28   MES1
  _   AAOARP00           1  01.17  96/10/17  01/03/26 13:08     6   MES1
  _   AAOEXP00           1  01.15  96/12/02  01/03/03 11:56    25   MES2
  _   AAOTSP00           1  01.15  96/07/02  01/03/01 09:23    12   RYS1
  ***** END OF MEMBERS *****

```

Note that you can access and edit BBPARM members AAOALS00, AAOEXP00, AAOARP00, and AAOTSP00 but in this section only the parameters in AAOARP00 are discussed. For documentation about the other members, refer to the *MAINVIEW AutoOPERATOR Customization Guide*.

2. Select **AAOARP00** with the (S)elect line command to edit the Automation Reporter-related parameters in this member.

The Automation Reporter Parms panel is displayed:

```

BMC Software ----- Automation Reporter Parms ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- MS@1
Primary command: ADD                               DATE --- 01/03/28
                                                    TIME --- 13:39:59

      Member          Current

New DSN ===>
      Current ===

Disp      ===>      MOD          Dataset disposition (SHR, MOD)

Interval ===>      15          Interval minutes (10 - 1440, or 0)

Off int   ===>      1440       Offload interval minutes (60 - 1440)

Alert Queue ===>  MAIN          Alert Queue

Press END to save changes,  CANCEL to cancel changes

```

The first time you bring up this panel, the display-only field **Current** === is blank and all the values in the display-only fields of this panel (which is the right side) are blank.

The fields are blank because the first time you bring up the Automation Reporter, no current data set values are available yet. After you have used the Automation Reporter once, the next time you access this panel, the **Current** == field and all the display fields will show the values you previously entered.

The left side of the panel will show the default values in BBPARM member AAOARPxx as shown in this panel.

Proceed to “Step 2: Allocate a Data Set”.

Step 2: Allocate a Data Set

Before you use the DPM application to activate the Automation Reporter, you must allocate a data set to which the data collected by the Automation Reporter is written.

Data Set Requirements

The data set should be a fixed block sequential data set and the maximum record length of 580 bytes.

This data set name is specified in the DPM application in BBPARM member AAOARPxx and then you can modify the other parameters that control how the Automation Reporter performs its data gathering functions.

After you have allocated the sequential data set, to specify the data set name in DPM, in the **New DSN** field of the Automation Reporter Params panel, enter the name of the sequential data set you have preallocated.

See number **1** in the following figure.


```

BMC Software ----- Automation Reporter ParmS ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                           TGT --- MS@1
                                                    DATE --- 01/03/28
                                                    TIME --- 13:39:59

                Member                Current

1 New DSN ==> AAO41.SAVE.ARSTATS
                Current ==

    Disp      ==>      MOD                Dataset disposition (SHR, MOD)

    Interval ==>      15                Interval minutes (10 - 1440, or 0)

    Off int   ==>      1440            Offload interval minutes (60 -
1440)

    Alert Queue ==>  MAIN                Alert Queue

Press END to save changes,  CANCEL to cancel changes

```

In this example, the new sequential data set is AAO41.SAVE.ARSTATS. This data set must be a preallocated sequential data set and have a maximum record length of 580 bytes.

Proceed to “Step 3: Specifying the Data Set Disposition”.

Step 3: Specifying the Data Set Disposition

In this step, specify the disposition of the data set you specified in Step 1.

Valid Values

Valid disposition values are SHR (share) and MOD (modify), which is the default value.

- Specifying SHR causes the Automation Reporter to overwrite all existing data.
- Specifying MOD causes the Automation Reporter to append data to the end of the data set from each offload cycle.

To specify the data set disposition, at the **Disp** field of the Automation Reporter ParmS panel, enter the disposition of the data set.

See number **2** in the following figure.

```

BMC Software ----- Automation Reporter ParmS ----- MAINVIEW AutoOPERATOR
COMMAND ==>
TGT --- MS@1
DATE --- 01/03/28
TIME --- 13:39:59

Member          Current

New DSN ==> AAO41.SAVE.ARSTATS
Current ==

2 Disp ==> MOD Dataset disposition (SHR, MOD)

Interval ==> 15 Interval minutes (10 - 1440, or 0)

Off int ==> 1440 Offload interval minutes (60 - 1440)

Alert Queue ==> MAIN Alert Queue

Press END to save changes, CANCEL to cancel changes

```

In this example, the data set disposition was left as its default value, MOD.

Proceed to “Step 4: Specifying Collection Intervals”.

Step 4: Specifying Collection Intervals

In this step, specify the collection interval (in minutes) for the Automation Reporter to collect data. For example, if you specify 60, then every 60 minutes the Automation Reporter will record the data in the subsystem for the resources and activities.

Valid Values

Valid collection intervals range from 10 minutes to 1440 minutes. The default is 15 minutes.

To specify the collection interval, in the **Interval** field of the Automation Reporter ParmS panel, enter the collection interval. See number **3** in the following figure.

```

BMC Software ----- Automation Reporter Parms ----- MAINVIEW AutoOPERATOR
COMMAND ===>                                     TGT --- MS@1
                                                    DATE --- 01/03/28
                                                    TIME --- 13:39:59

                Member                Current

New DSN ===> AAO41.SAVE.ARSTATS
                Current ===

Disp      ===>      MOD                      Dataset disposition (SHR, MOD)

3 Interval ===>      60                      Interval minutes (10 - 1440, or 0)

Off int   ===>      1440                     Offload interval minutes (60 -
1440)

Alert Queue ===> MAIN                      Alert Queue

Press END to save changes,  CANCEL to cancel changes

```

In this example, the interval is specified as 60 minutes. Therefore, after this DPM member is activated, every hour the Automation Reporter records the data as it exists at the end of the interval.

For example, if there were 10 ALERTs active during the 60 minute interval but only 5 ALERTs are active at the end of the 60 minute interval, the Automation Reporter records that there are 5 active ALERTs. The data is collected for each interval and saved in the subsystem and offloaded to the data set when the offload interval expires.

Note: The data is not available to be browsed until it is offloaded into the data set.

Hint

Choose the collection interval value carefully. You want to ask yourself whether you really need to have data collected once an hour? Once every 15 minutes? If you specify every 15 minutes, data is collected for all the resources and activities 4 times an hour, 24 hours a day. You may or may not need to collect data at this frequency.

BMC Software recommends specifying twice a day collection (or every 720 minutes).

Proceed to “Step 5: Specifying the Offload Interval”.

Step 5: Specifying the Offload Interval

In this step, specify the offload interval (in minutes) for the Automation Reporter to offload the data it has collected to the data set. For example, if you specify 120, then every 2 hours the Automation Reporter will write the data it has collected to the sequential data set you specified in Step 1.

Valid Values

Valid offloading intervals are 60 minutes to 1440 minutes. The default is 1440 (or once a day).

To specify the offload interval:

In the **Off int** field of the Automation Reporter Parms panel, enter the offload interval. See number **4** in the following figure.

BMC Software ----- Automation Reporter Parms -----		MAINVIEW AutoOPERATOR
COMMAND ==>		TGT --- MS@1
		DATE --- 01/03/28
		TIME --- 13:39:59
Member	Current	
New DSN ==>	AAO41.SAVE.ARSTATS	
	Current ==	
Disp ==>	MOD	Dataset disposition (SHR, MOD)
Interval ==>	60	Interval minutes (10 - 1440, or 0)
4 Off int ==>	120	Offload interval minutes (60 - 1440)
Alert Queue ==>	MAIN	Alert Queue
Press END to save changes, CANCEL to cancel changes		

In this example, the offload interval is specified as 120. Therefore, after this DPM member is activated, the Automation Reporter records the collected data once every two hours, for the life of the BBI-SS PAS, to the sequential data set.

Hint

The offload interval should always be larger than the collection interval.

If you plan to collect data every 12 hours (or 720 minutes), BMC Software recommends specifying once a day offloading (or 1440 minutes).

Proceed to “Step 6: Specifying an MAINVIEW AutoOPERATOR ALERT Queue Name”.

Step 6: Specifying an MAINVIEW AutoOPERATOR ALERT Queue Name

In this step, specify the name of an MAINVIEW AutoOPERATOR ALERT queue to which any MAINVIEW AutoOPERATOR ALERTs created by the Automation Reporter will be queued to. For example, if you specify ARALRT, then any ALERTs will be queued to a queue named ARALRT.

Valid Values

Any valid MAINVIEW AutoOPERATOR ALERT queue name can be entered in this field (default queue name is MAIN). You do not have to enter the name of a pre-existing ALERT queue. You can enter the name of a new queue and it will be created for you when the Automation Reporter is activated and ALERTs are generated.

To specify the ALERT queue name, in the **Alert Queue** field of the Automation Reporter Parms panel, enter the name of the ALERT queue that you want Automation Reporter ALERTs queued to.

See number 5 in the following figure.

```

BMC Software ----- Automation Reporter Parms ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                           TGT --- MS@1
                                                    DATE --- 01/03/28
                                                    TIME --- 13:39:59

                Member                Current

New DSN  ==>  AAO41.SAVE.ARSTATS
                Current  ===

Disp      ==>      MOD                Dataset disposition (SHR, MOD)

Interval  ==>      60                Interval minutes (10 - 1440, or 0)

Off Int   ==>      120                Offload interval minutes (60 -
1440)

5  Alert Queue ==>  ARALRT                Alert Queue

Press END to save changes,  CANCEL to cancel changes

```

In this example, the ALERT queue name is ARALRT. This queue, if it has not already been created, will be created when the first ALERT is generated by the Automation Reporter.

Proceed to “Step 7: Activating the Automation Reporter”.

Step 7: Activating the Automation Reporter

The Automation Reporter is initialized and it begins gathering data at the intervals you specified when you use the Activate function of the DPM to activate BBPARM member AAOARPxx.

Note: You also may use the BBI command **.E P AAOARPXX** to activate the AAOARPxx member.

To activate the AAOARP00 member:

1. After you have completed steps 1 through 6, press **PF3** to save the values you entered.

The Dynamic Parameter Manager panel is displayed:

BMC Software ----- Dynamic Parameter Manager -----						MAINVIEW AutoOPERATOR	
COMMAND ==>						TGT ==> MS@1	
Primary command: Add						DATE --- 01/03/28	
						TIME --- 10:01:49	
LC CMDS --- (S)elect, (A)ctivate							
Cmd	Member	Lib	VV.MM	Created	Changed	Size	ID
—	AAOALS00	1	01.04	97/02/07	01/03/26 13:07	28	MES1
—	AAOARP00	1	01.17	96/10/17	01/03/28 13:08	6	MES1
—	AAOEXP00	1	01.15	96/12/02	01/03/03 11:56	25	MES2
—	AAOTSP00	1	01.15	96/07/02	01/03/01 09:23	12	RYS1
***** END OF MEMBERS *****							

2. Activate the AAOARP00 member by entering an **A** (for the Activate command) in the **Cmd** column.

See number **6** in the following figure.

```

BMC Software ----- Dynamic Parameter Manager ----- MAINVIEW AutoOPERATOR
COMMAND ==> TGT ==> MS@1
Primary command: Add DATE --- 01/03/28
TIME --- 10:01:49

LC CMDS --- (S)elect, (A)ctivate

Cmd  Member      Lib VV.MM  Created      Changed      Size  ID
--  -
A 6  AAOALS00      1  01.04  97/02/07    01/03/26 13:07    28  MES1
A 6  AAOARP00      1  01.17  96/10/17    01/03/28 13:08     6  MES1
-    AAOEXP00      1  01.15  96/12/02    01/03/03 11:56    25  MES2
-    AAOTSP00      1  01.15  96/07/02    01/03/01 09:23    12  RYS1
***** END OF MEMBERS *****

```

The Confirm Parameter Activation panel is displayed.

See numbers **7** and **8** in the following figure.

```

BMC Software ----- Confirm Parameter Activation ----- MAINVIEW AutoOPERATOR
COMMAND ==> TGT --- MS@1
DATE --- 01/03/29
TIME --- 10:02:21

Current TARGET:      MS@1

Current SSID:        MS@1

Last Parm:           7  N/A      (Values may have been temporarily modified)

Replaced by:         8  AAOARP00
Last update:
User:

Instructions:

  Press ENTER to confirm activation request.
    (The parameters in the current SS will be dynamically updated)

  Press END   to cancel activation request.

```

The first time you activate a member, the **Last Parm (7)** field value is N/A and the **Last Update (8)** field is blank. In the future, when you activate a member, the **Last Parm** field shows the date of the currently active AAOARPx member. The **Last Update** field shows the date you activated the current member.

3. To activate the changes you entered, press **Enter**.
4. To cancel activating this member, press **PF3**.

Once you activate the AAOARP00 member, the Automation Reporter will begin recording data and offloading it to a sequential data set at the intervals you just specified.

For information about stopping the Automation Reporter, refer to “Stopping the Automation Reporter” on page 12-14. For information about the data the Automation Reporter collects and how it looks, refer to “Creating Automation Reporter Reports” on page 12-15.

Stopping the Automation Reporter

To stop the Automation Reporter from collecting data, follow these steps:

- Step 1** Display the Automation Reporter Parms panel and edit the current AAOARPx member; for example:

```

BMC Software ----- Automation Reporter Parms ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                         TGT --- MS@1
                                                    DATE --- 01/03/28
                                                    TIME --- 13:39:59

                Member                Current

New DSN ==>
                Current === AAO41.SAVE.ARSTATS

Disp      ==>                                MOD Dataset disposition (SHR, MOD)

Interval ==>  9 0                            60 Interval minutes (10 - 1440, or 0)

Off int   ==>                                120 Offload interval minutes (60 - 1440)

Alert Queue ==>                                ARALRT Alert Queue

Press END to save changes, CANCEL to cancel changes

```

- Step 2** Enter a zero (0) in the **Interval** field (at 9).

Entering a 0 turns off all data recording.

- Step 3** Press **PF3/END** to save this change.

- Step 4** Activate this member.

To activate the AAOARPx member, follow the instructions in “Step 7: Activating the Automation Reporter” on page 12-12.

Once the BBPARM member AAOARPxx is activated, the Automation Reporter, is turned off and data recording ceases.

For information about what the collected data looks like, refer to “Creating Automation Reporter Reports”.

Creating Automation Reporter Reports

With the Automation Reporter, you can store the data collected into a sequential data set, thereby creating a historical record of how MAINVIEW AutoOPERATOR activities and resources performed over hours and days. By using SAS, COBOL, report writing tools, or spreadsheet tools, you can sort and organize the historical data to track and illustrate what automation is taking place on your system over specific time periods.

What Kind of Data Is Collected

Once the Automation Reporter is activated and begins collecting data, data is collected for all of the following items:

Data Item Name	Description															
Actions (ACTN)	<p>The ACTN data item contains 7 fields of data (action record data count) for each of 13 different action records (one built for each Event type):</p> <table><tr><td>MSG</td><td>CICS</td><td>JRNL</td></tr><tr><td>TIME</td><td>ALRT</td><td>DB2</td></tr><tr><td>EXT</td><td>IMS</td><td>CMD</td></tr><tr><td>JES3</td><td>ALRM</td><td>VAR</td></tr><tr><td>MQS</td><td></td><td></td></tr></table> <p>Within one ACTN record are 7 fields of data for these 13 events. The data contains values representing things such as how often the events occurred, how many were handled or suppressed, and so on.</p> <p>This data is collected in intervals.</p>	MSG	CICS	JRNL	TIME	ALRT	DB2	EXT	IMS	CMD	JES3	ALRM	VAR	MQS		
MSG	CICS	JRNL														
TIME	ALRT	DB2														
EXT	IMS	CMD														
JES3	ALRM	VAR														
MQS																
MAINVIEW AutoOPERATOR ALERTS (ALRT)	<p>The ALRT data item contains data for six different priorities of MAINVIEW AutoOPERATOR ALERTs:</p> <ul style="list-style-type: none">• CRITICAL• MAJOR• MINOR• WARN• INFO• CLEAR• <p>Within one ALRT record are eight fields of data for these six ALERT priorities. The data contains values representing things such as how many ALERTs were active, how many were created or deleted, and so on.</p> <p>This data is collected in intervals.</p>															
Events (EVNT)	<p>One record is collected for each entry in the Event Statistics Table.</p> <p>The record contains information such as the Text-ID of the event, how many times the event occurs in the Event Statistics Table, the number of times the event was handled, and so on.</p> <p>This data is collected cumulatively.</p>															
MAINVIEW AutoOPERATOR EXECs (EXEC)	<p>One record is collected for each EXEC in the SYSPROC and the SYSEXEC concatenation.</p> <p>The record contains information such as the EXEC name, the number of times the EXEC ran, abended, and so on.</p> <p>This data is collected cumulatively.</p>															

Data Item Name	Description
MAINVIEW AutoOPERATOR Rules (RULE)	<p>One record is created for each enabled, disabled, and suspended Rule.</p> <p>The record contains information such as the name of the Rule, how many times it fired, the Rule Set it belongs to, and so on.</p> <p>This data is collected cumulatively.</p>
MAINVIEW AutoOPERATOR Rule Sets (RULESET)	<p>There are two subtype records for RULESET:</p> <ul style="list-style-type: none"> • SET Contains information about the Rule Set strategy (if an overall strategy of INDIVIDUAL is used in the Rules Processor), the number of Rules in the Rule Set, the fired count of the Rule Set, and so on. <p>One SET record is created for every Rule Set that is active at the time offload interval time (set by the Off Int parameter). If 10 Rule Sets are active at the end of the interval, 10 SET records are created.</p> <ul style="list-style-type: none"> • AUTO Contains information about Rules automation such as which overall automation strategy the Rules Processor is using, whether HONORMPF was turned on, and so on. <p>One AUTO record is created at the offload interval time (set by the Off Int parameter). If 10 Rule Sets are active at the end of the interval, you will have 1 AUTO record and 10 SET records.</p> <p>Data for both these subtypes is collected cumulatively.</p>

Data Item Name	Description
Resources (RES)	<p>The record contains information about how much private storage (above and below) was allocated, how many PQEs were created, how many CPU seconds the subsystem used, and so on.</p> <p>This data is collected in intervals.</p>
TapeSHARE for MAINVIEW AutoOPERATOR (TAPE)	<p>When you have the TapeSHARE for MAINVIEW AutoOPERATOR component implemented in an MVS image (also called a partner) where Automation Reporter also is running, you will collect statistics for the tape sharing activity performed by TapeSHARE in TAPE records.</p> <p>There are two subtype records for TAPE:</p> <ul style="list-style-type: none">• LOCAL <p>Contains information about tape sharing activity such as the total number of tape device requests, total time needed for a TAKE, how many devices were shared, and so on.</p> <p>One LOCAL record is created per interval where both TapeSHARE and Automation Reporter are operating. If 10 partners are participating in tape sharing activity with TapeSHARE at the end of the interval, you must save and collect the Automation Reporter TAPE: LOCAL records from each partner individually.</p> <ul style="list-style-type: none">• PLEX <p>Contains information about partner to partner communication such as how often a partner requested devices from the other partners, how long it took for a device to be shared, and so on.</p> <p>One PLEX record is created per interval. Within one PLEX record, if 10 partners are active at the end of the interval, you will have 9 fields of data collected for each of the 10 partners.</p> <p>Data for both these subtypes is collected in intervals.</p>

Refer to “What Record Types Are Available” on page 12-25 for a matrix that shows the data items, their subtypes, how the data is collected, and a brief description.

How the Data Is Saved

After a BBI-SS PAS is cold started and the Automation Reporter is activated, the Automation Reporter begins to collect and save data in the BBI-SS PAS before it is written to the sequential data set. If during the life of the BBI-SS PAS you issue the

.E STATS

command, all data collection for events and Rules is erased and the Automation Reporter collects data beginning from the time you issued this command.

For more information about collecting data and BBI-SS PASs, refer to “Managing Data Collection Over the Life of the BBI-SS PAS” on page 12-20.

Data is saved in *intervals* or *cumulatively*.

What Is Interval Data

Interval Data is data collected at user-specified intervals. It contains information about the activity (or resource) that was measured at the end of the interval. The interval duration is specified on the **Interval** field of the Automation Reporter Params panel (see “Step 4: Specifying Collection Intervals” on page 12-8).

When a new interval begins, data is collected *as if the previous interval did not occur*.

For example, if the Automation Reporter begins collecting data at 9:00 A.M. in 30 minute intervals and you choose to dump the collected data at 10:30 A.M. the same morning, you will have three records for each item: one for 9:00 to 9:30, from 9:30 to 10:00, and from 10:00 to 10:30.

To see how a specific item performed over the entire hour and half period, you would *add up the values in all three of these records*.

The items that the Automation Reporter collects in intervals are

- ACTN
- ALRT
- RES
- TAPE (LOCAL)
- TAPE (PLEX)

What Is Cumulative Data

Cumulative data represents data collected since the BBI-SS PAS was cold-started (or the **.E STATS** or **.E BLDL** commands were issued) *up until the time the data was offloaded into the data set.*

For example, if the BBI-SS PAS is started at 8:30 A.M. and the Automation Reporter is activated and begins collecting data at 9:00 A.M., the Automation Reporter collects data (without interruption) from 9:00 A.M. until the data is written into the data set.

The value you specify in the **Off Int** field determines when and how often data is offloaded (see “Step 5: Specifying the Offload Interval” on page 12-10). If you specify 90 minutes in the **Off Int** field, the data is offloaded to the data set at 10:30 A.M. the same day. One record is created for each record type and all the activity for the past 90 minutes is reflected in the data.

If the data is offloaded to the data set a second time at 12:00 P.M. of the same day (90 minutes later), one record, spanning the past three hours is created. All the activity for the three hours since the BBI-SS PAS was up and the Automation Reporter is collecting data is reflected in the values recorded.

The items that the Automation Reporter collects cumulatively are

- EVENT
- EXEC
- RULE
- RULE SET, AUTO
- RULE SET, SET

Refer to the table in “What Record Types Are Available” on page 12-25 for a brief description of each item for which the Automation Reporter collects data and for the type of data that is collected for each item (interval or cumulative).

Managing Data Collection Over the Life of the BBI-SS PAS

When the Automation Reporter is active and recording data, the data is saved in the BBI-SS PAS before it is written to the user-allocated sequential data set.

To make sure data is not lost during a BBI-SS PAS cold start, set the interval parameter to zero (0) prior to BBI-SS PAS termination to stop and save data collection. You can write a Rule to do this automatically for you.

The Rule should capture the **Purge** or **Cancel** command issued against the BBI-SS PAS and schedule an EXEC that issues two commands with a short wait specified between them. The first command the EXEC should issue is **.E P AAOARPxx**, where **xx** is the suffix of the BBPARM member AAOARPxx that is currently controlling the Automation Reporter.

Specify that the EXEC waits until the `DATA OFFLOAD` message is issued by the Automation Reporter then reissues the **Purge** or **Cancel** command against the BBI-SS PAS. This ensures that the already collected data is saved and the BBI-SS PAS can be stopped.

BBI-SS PAS Abends

If the BBI-SS PAS abends unexpectedly, all cumulative data is lost but the interval data collected up until the abend is not lost.

When the BBI-SS PAS is restarted, the Automation Reporter is restarted automatically and continues to operate with all the same parameters as before the BBI-SS PAS abend. Data collection continues and interval data collected is appended to the interval data collected before the BBI-SS PAS abended. Cumulative data is collected anew and will be offloaded at the specified offload interval.

What the Record Looks Like: Basic Data Record Design

The basic record is comprised of data fields separated by commas, also known as Comma Separated Data (CSD) format. This format is parsed easily by many reporting packages, which is important because you may decide to create a PC spreadsheet with the collected data.

There is a header portion (always shown in capital letters) that contains consistent information for every record and a data portion that contains specific data for information collected for every interval. This is an example of a data record:

```
SYSID,SSID,VVR,SYSPLEX,"YYYYMMDD","HH:MM",I
INTERVAL,RECTYPE,SUBTYPE,
"YYYYMMDD","HH:MM",data,EOR
```

The individual fields of the record are described in Table 12-1 on page 12-22.

Table 12-1 Header Fields Description (Part 1 of 2)

Field Name	Maximum Length (in Characters)	Data Type (Character or Numeric)	Description
SYSID System name	8	Character	Is the MVS system name from the CVT the BBI-SS PAS was executing on.
SSID Subsystem identifier	4	Character	Is the subsystem identifier (SSID) of the BBI-SS PAS that created this record.
VVR Record version number	3	Numeric	Is the version and release numbers of the record, for future reporter record compatibility. Currently, the value is 410.
SYSPLEX Name of the MVS sysplex	8	Character	Is the sysplex name as defined in the ECVT control block.
"YYYYMMDD" Interval date	8	Numeric	Is the date, in quotation marks, when the recording interval began.
"HH:MM" Interval time	5	Numeric	Is the time, in quotes, when the recording interval began
INTERVAL Duration of the interval	8	Numeric	Is the length of the recording interval when this record was created in MMMM format, where MMMM can be any value up to 1440 minutes
RECTYPE Record type	8	Character	Is the record type identifier; possible values can be: <div> <div>ACTN</div> <div>ALRT</div> <div>EVNT</div> <div>EXEC</div> <div>RES</div> <div>RULE</div> <div>RULESET</div> <div>TAPE</div> </div> For more information about the different record types you can collect data records for, refer to "What Record Types Are Available" on page 12-25.
SUBTYPE Subtype	8	Character	Is the record subtype identifier. For more information about the different record types and subtypes you can collect data records for, refer to "What Record Types Are Available" on page 12-25.
"YYYYMMDD" Write date	8	Numeric	For data that is saved in intervals (interval data), it is the time (in quotes) the record was saved in the BBI-SS PAS. For data that is saved cumulatively (cumulative data), it is the date the record was offloaded to the sequential data set

Table 12-1 Header Fields Description (Part 2 of 2)

Field Name	Maximum Length (in Characters)	Data Type (Character or Numeric)	Description
"HH:MM" Write time	5	Numeric	For data that is saved in intervals (interval data), it is the time (in quotes) the record was saved in the BBI-SS PAS. For data that is saved cumulatively (cumulative data), it is the time the record was offloaded to the sequential data set
data Collected data	Variable	Alphanumeric	Is data collected for a specific record type and subtype. Refer to "Varying Data Record Lengths" for more information about the variable collected data length.
EOR End of Record	3	Character	Is a 3-character field denoting the end of the record.

Varying Data Record Lengths

It is important to note that for any type of data sorting or report writing, the actual record length and the number of fields will vary. The header data is constant in length and content although the type of data collected (ALRT, EVNT, and so on) will cause the field lengths to vary.

The reason for varying length records and a non-determined set of record types is for expansion of the data elements and record types in future releases of the Automation Reporter.

Any data item field with a null or missing value will not be shown, but two commas (,,) indicate the absence of data between them. Therefore, two null or missing values are denoted by three commas (,,,) and so on. Refer to "Describing a Sample Data Record" for more information about what the data record looks like.

Describing a Sample Data Record

This sample record from May 1, 1997, shows a Rule (Rule ID RUL001) was fired 13 times between 8:00 and 8:20 while Automation Strategy was set to FIRST. It also records that the Rule Set name of the Rule is AAORUL01, that an EXEC named RULEXEC was fired, and that the event type that caused the Rule to fire is a MSG event.

The following example shows what the sample data record looks like.

1	2	3	4	5	6	7	8	9	10	11
SYSA	SSA1	410	SYSAPLEX	"19970501"	"08:00"	20	RULE	ONLY	"19970501"	"10:00"
12	13	14	15	16	17	18	19			
RULE001	FIRST	13	AAORUL01	,	,	,	RULEEXEC	MSG	EOR	

The information in the header is described below:

1	SYSA	SMF ID of the system on which the record was created
2	SSA1	BBI-SS PAS subsystem identifier from which this record was created
3	410	is the version and release number of the Automation Reporter record
4	SYSAPLEX	name of the sysplex created
5	"19970501"	date the interval began recording
6	"08:00"	time the interval began recording
7	20	number of minutes in the time interval
8	RULE	record type of RULE For more information about record types and their subtypes, refer to "What Record Types Are Available" on page 12-25.
9	ONLY	record subtype of ONLY For more information about record types and their subtypes, refer to "What Record Types Are Available" on page 12-25.
10	"19970501"	date the record was written to the output data set
11	"10:00"	time the record was written to the output data set
12	RUL0001	identifier of the Rule that was fired
13	FIRST	Automation Strategy that was in place in the Rules Processor when the Rule fired
14	13	number of times the Rule was fired within the time interval of the record
15	AAORUL01	name of the Rule Set to which the Rule belongs
16	, , , ,	three blank data fields
17	RULEEXEC	name of the EXEC that was fired by the Rule
18	MSG	event type that triggered the firing of the Rule
19	EOR	end of the record

When data is missing, as there is at 16, there are commas to indicate the fields are blank. In this example, the blank data fields are for the Rule documentation fields that were left blank when the Rule was created. The data fields exclusive of the header can be of varying lengths.

What Record Types Are Available

The following table summarizes items the Automation Reporter collects data for, subtypes, whether the data is collected cumulatively or in single intervals, and gives a brief description.

Data Record Type	Subtype	Interval Data	Cumulative Data	Description	See Page
ACTN	ONLY	X		one record is collected per time interval; contains numeric counts for 10 different events within each record.	12-27
ALRT	ONLY	X		one record is collected per time interval; contains numeric counts for six different ALERT priorities within each record.	12-33
EVENT	ONLY		X	One record is collected for each entry in the Event Statistics Table. The record contains information such as the Text-ID of the event, how many items the event occurs in the Event Statistics Table, the number of times the event was handled, and so on	12-35
EXEC	ONLY		X	One record is collected for each EXEC in the SYSPROC and the SYSEXEC BLDL. The record contains information such as the EXEC name, the number of times the EXEC ran, abended and so on	12-36
RULE	ONLY		X	One record is created for each enabled, disabled, and suspended Rule. The record contains information such as the name of the Rule, how many times it fired, the Rule Set it belongs to, and so on.	12-37
RULESET	AUTO		X	One AUTO record is created every time the data is offloaded. If ten Rule Sets are active at the end of the interval, you then have one AUTO record and ten SET records. The record contains information about Rules automation such as which overall automation strategy the Rules Processor is using, whether HONOR MPF was turned on, and so on.	12-39

Data Record Type	Subtype	Interval Data	Cumulative Data	Description	See Page
RULESET	SET		X	<p>One SET record is created for every Rule Set that is active at the time the data is offloaded. If ten Rule Sets are active at the end of the interval, ten SET records are created.</p> <p>Contains information about the Rule Set strategy (if an overall strategy of INDIVIDUAL is used in the Rules Processor), the number of Rules in the Rule Set, the fired count of the Rule Set, and so on.</p>	12-39
RES	ONLY	X		<p>One record is collected per time interval; contains information about how much private storage (above and below) was allocated, how many PQEs were created, and so on.</p>	12-40
TAPE	LOCAL	X		<p>One LOCAL record is created per interval. If ten partners are participating in tape sharing activity with TapeSHARE at the end of the interval, you must save and collect the Automation Reporter TAPE: LOCAL records from each partner individually.</p> <p>Contains information about tape sharing activity such as the number of total device requests, the number of devices that were requested, and so on.</p>	12-42
TAPE	PLEX	X		<p>One PLEX record is created per interval. Within one PLEX record, if ten partners are active at the end of the interval, you have nine fields of data for each of the ten partners.</p> <p>Contains information about partner to partner communication such as how often a partner requested devices from the other partners, how long it took for a device to be shared, and so on.</p>	12-43

The following sections contain tables for each record type (and subtype where applicable) and briefly describe possible uses for the collected data.

Tracking Actions (ACTN)

This table describes the data collected for the record type ACTN, subtype ONLY. ACTN records are collected in intervals.

Possible Usage

The ACTN records contain 7 fields of data for 10 separate types of Events:

MSG	MVS messages
CMD	MVS commands
JRNL	BBI-SS PAS Journal messages
TIME	Timed events
ALRT	MAINVIEW AutoOPERATOR ALERTs
EXT	Externally generated messages
IMS	IMS messages
CICS	CICS messages
DB2	DB2 messages
JES3	JES3 messages
ALRM	ALRM messages
VAR	VAR messages
MQS	MQS messages

One of the useful things you can use this collected data for is to determine how many of these actions are performed by automation. For example, you can determine the message suppression rate by comparing the **EVENT COUNT** values for MSG versus the **SUPPRESSED COUNT** value and calculate what percentage of MSGs are suppressed by automation.

Data Item Name	Max. Field Length	Type of Data	Description
ACTION RECORD COUNT	2	Numeric	Total number of action types within the record
ACTION RECORD DATA COUNT	1	Numeric	Total number of fields of data for each action type
MSG	4	Character	Name of the action type (MSG)
MSG TOTAL	8	Numeric	Total number of MSGs counted during the interval
MSG HANDLED COUNT	8	Numeric	Handled count: in other words, the total number of times a MSG event caused one (or more) Rule to fire
MSG SUPPRESSED COUNT	8	Numeric	Total number of MSGs suppressed from their destination during the interval
MSG SCHEDULED EXEC COUNT	8	Numeric	Total number of EXECs scheduled by MSG events
MSG ALERTS CREATED COUNT	8	Numeric	Total number of ALERTs created by MSG events
MSG HARDCOPY LOG SUPPRESSED COUNT	8	Numeric	Total number of MSGs suppressed from the hardcopy log during the interval
CMD	4	Character	Name of the action type (CMD)
CMD TOTAL	7	Numeric	Total number of CMDs counted during the interval
CMD HANDLED COUNT	7	Numeric	Handled count: in other words, the total number of times a CMD event caused one (or more) Rule to fire
CMD SUPPRESSED COUNT	7	Numeric	Total number of CMDs suppressed from their destination during the interval
CMD SCHEDULED EXEC COUNT	7	Numeric	Total number of EXECs scheduled by CMD events
CMD ALERTS CREATED COUNT	7	Numeric	Total number of ALERTs created by CMD events
CMD HARDCOPY LOG SUPPRESSED COUNT	7	Numeric	Total number of CMD messages suppressed from the hardcopy log during the interval
JRNL	4	Character	Name of the action type (JRNL)
JRNL TOTAL	8	Numeric	Total number of BBI-SS PAS Journal messages counted during the interval
JRNL HANDLED COUNT	8	Numeric	Handled count: in other words, the total number of times a JRNL event caused one (or more) Rule to fire
JRNL SUPPRESSED COUNT	8	Numeric	Total number of JRNL messages suppressed from their destination during the interval
JRNL SCHEDULED EXEC COUNT	8	Numeric	Total number of EXECs scheduled by JRNL events
JRNL ALERTS CREATED COUNT	8	Numeric	Total number of ALERTs created by JRNL events

Data Item Name	Max. Field Length	Type of Data	Description
JRNL HARDCOPY LOG SUPPRESSED COUNT	8	Numeric	Total number of JRNL messages suppressed from the hardcopy log during the interval
TIME	4	Character	Name of the action type (TIME)
TIME TOTAL	4	Numeric	Total number of TIME events counted during the interval
TIME HANDLED COUNT	4	Numeric	Handled count: in other words, the total number of times a TIME event caused one (or more) Rule to fire
TIME SUPPRESSED COUNT	4	Numeric	Total number of TIME events suppressed from their destination during the interval
TIME SCHEDULED EXEC COUNT	4	Numeric	Total number of EXECs scheduled by TIME events
TIME ALERTS CREATED COUNT	4	Numeric	Total number of ALERTs created by TIME events
TIME HARDCOPY LOG SUPPRESSED COUNT	4	Numeric	Total number of TIME events suppressed from the hardcopy log during the interval
ALRT	4	Character	Name of the action type (ALRT)
ALRT TOTAL	7	Numeric	Total number of ALRT events counted during the interval
ALRT HANDLED COUNT	7	Numeric	Handled count: in other words, the total number of times an ALRT event caused one (or more) Rule to fire
ALRT SUPPRESSED COUNT	7	Numeric	Total number of ALRT messages suppressed from their destination during the interval
ALRT SCHEDULED EXEC COUNT	7	Numeric	Total number of EXECs scheduled by ALRT events
ALRT ALERTS CREATED COUNT	7	Numeric	Total number of ALERTs created by ALRT events
ALRT HARDCOPY LOG SUPPRESSED COUNT	7	Numeric	Total number of ALRT messages suppressed from the hardcopy log during the interval
EXT	4	Character	Name of the action type (EXT)
EXT TOTAL	4	Numeric	Total number of EXT events counted during the interval
EXT HANDLED COUNT	4	Numeric	Handled count: in other words, the total number of times an EXT event caused one (or more) Rule to fire
EXT SUPPRESSED COUNT	4	Numeric	Total number of EXT messages suppressed from their destination during the interval
EXT SCHEDULED EXEC COUNT	4	Numeric	Total number of EXECs scheduled by EXT events
EXT ALERTS CREATED COUNT	4	Numeric	Total number of ALERTs created by EXT events

Data Item Name	Max. Field Length	Type of Data	Description
EXT HARDCOPY LOG SUPPRESSED COUNT	4	Numeric	Total number of EXT messages suppressed from the hardcopy log during the interval
IMS	4	Character	Name of the action type (IMS)
IMS TOTAL	8	Numeric	Total number of IMS events counted during the interval
IMS HANDLED COUNT	8	Numeric	Handled count: in other words, the total number of times an IMS event caused one (or more) Rule to fire
IMS SUPPRESSED COUNT	8	Numeric	Total number of IMS messages suppressed from their destination during the interval
IMS SCHEDULED EXEC COUNT	8	Numeric	Total number of EXECs scheduled by IMS events
IMS ALERTS CREATED COUNT	8	Numeric	Total number of ALERTs created by IMS events
IMS HARDCOPY LOG SUPPRESSED COUNT	8	Numeric	Total number of IMS messages suppressed from the hardcopy log during the interval
CICS	4	Character	Name of the action type (CICS)
CICS TOTAL	6	Numeric	Total number of CICS events counted during the interval
CICS HANDLED COUNT	6	Numeric	Handled count: in other words, the total number of times a CICS event caused one (or more) Rule to fire
CICS SUPPRESSED COUNT	6	Numeric	Total number of CICS messages suppressed from their destination during the interval
CICS SCHEDULED EXEC COUNT	6	Numeric	Total number of EXECs scheduled by CICS events
CICS ALERTS CREATED COUNT	6	Numeric	Total number of ALERTs created by CICS events
CICS HARDCOPY LOG SUPPRESSED COUNT	6	Numeric	Total number of CICS messages suppressed from the hardcopy log during the interval
DB2	4	Character	Name of the action type (DB2)
DB2 TOTAL	8	Numeric	Total number of DB2 events counted during the interval
DB2 HANDLED COUNT	8	Numeric	Handled count: in other words, the total number of times a DB2 event caused one (or more) Rule to fire
DB2 SUPPRESSED COUNT	8	Numeric	Total number of DB2 messages suppressed from their destination during the interval
DB2 SCHEDULED EXEC COUNT	8	Numeric	Total number of EXECs scheduled by DB2 events
DB2 ALERTS CREATED COUNT	8	Numeric	Total number of ALERTs created by DB2 events

Data Item Name	Max. Field Length	Type of Data	Description
DB2 HARDCOPY LOG SUPPRESSED COUNT	8	Numeric	Total number of DB2 messages suppressed from the hardcopy log during the interval
JES3	4	Character	Name of the action type (JES3)
JES3 TOTAL	6	Numeric	Total number of JES3 events counted during the interval
JES3 HANDLED COUNT	6	Numeric	Handled count: in other words, the total number of times a JES3 event caused one (or more) Rule to fire
JES3 SUPPRESSED COUNT	6	Numeric	Total number of JES3 messages suppressed from their destination during the interval
JES3 SCHEDULED EXEC COUNT	6	Numeric	Total number of EXECs scheduled by JES3 events
JES3 ALERTS CREATED COUNT	6	Numeric	Total number of ALERTs created by JES3 events
JES3 HARDCOPY LOG SUPPRESSED COUNT	6	Numeric	Total number of JES3 messages suppressed from the hardcopy log during the interval
ALRM	4	Character	Name of the action type (ALRM)
ALRM TOTAL	6	Numeric	Total number of ALRM events from the MAINVIEW Alarm Manager component counted during the interval
ALRM HANDLED COUNT	6	Numeric	Handled count: in other words, the total number of times an ALRM event caused one (or more) Rule to fire
RESERVED FIELD	6	Numeric	This field is always 0 and no data is collected
ALRM SCHEDULED EXEC COUNT	6	Numeric	Total number of EXECs scheduled by ALRM events
ALRM ALERTS CREATED COUNT	6	Numeric	Total number of ALERTs created by ALRM events
RESERVED FIELD	6	Numeric	This field is always 0 and no data is collected
VAR	4	Character	Name of the action type (VAR)
VAR TOTAL	6	Numeric	Total number of VAR events counted during the interval. VAR events are counted by the Automation Reporter <i>only if</i> at least one VAR-initiated Rule is enabled during the collection interval. If no VAR-initiated Rules are enabled during the interval, this field will always equal zero (0).
VAR HANDLED COUNT	6	Numeric	Handled count: in other words, the total number of times a VAR event caused one (or more) Rule to fire
RESERVED FIELD	6	Numeric	This field is always 0 and no data is collected
VAR SCHEDULED EXEC COUNT	6	Numeric	Total number of EXECs scheduled by VAR events

Data Item Name	Max. Field Length	Type of Data	Description
VAR ALERTS CREATED COUNT	6	Numeric	Total number of ALERTs created by VAR events
RESERVED FIELD	6	Numeric	This field is always 0 and no data is collected
MQS	4	Character	Name of the action type (MQS)
MQS TOTAL	6	Numeric	Total number of MQS events counted during the interval. MQS events are counted by the Automation Reporter only if the BBI-SS PAS is connected to an MQS queue manager. If the BBI-SS PAS is not connected to an MQS queue manager, this field will always equal zero (0).
MQS HANDLED COUNT	6	Numeric	Handled count: in other words, the total number of times an MQS event caused one (or more) Rule to fire
MQS SUPPRESSED COUNT	6	Numeric	Total number of MQS messages suppressed from their destination during the interval
MQS SCHEDULED EXEC COUNT	6	Numeric	Total number of EXECs scheduled by MQS events
MQS ALERTS CREATED COUNT	6	Numeric	Total number of ALERTs created by MQS events
RESERVED FIELD	6	Numeric	This field is always 0 and no data is collected

Figure 12-1 is a sample data record for ACTN for two intervals.

Figure 12-1 Sample Data Record for ACTN, Subtype=ONLY

```

/* SAMPLE RECORD FOR TYPE ACTN, SUB TYPE ONLY          */
SYSC,AOIA,410,BBPLEX01,"19970528","19:00",10,ACTN,ONLY,"19970528","19:00",
  10,6,MSG,65,0,0,0,0,0,CMD,34,0,0,0,0,0,JRNL,1,0,0,0,0,0,TIME,0,0,0,0,0,0,
  ALRT,0,0,0,0,0,0,EXT,0,0,0,0,0,0,IMS,0,0,0,0,0,0,CICS,0,0,0,0,0,0,DB2,0,0,
  0,0,0,0,JES3,0,0,0,0,0,0,ALRM,0,0,0,0,0,0,VAR,0,0,0,0,0,0,MQS,0,0,0,0,0,0,EOR
SYSC,AOIA,410,BBPLEX01,"19970528","18:50",10,ACTN,ONLY,"19970528","18:50",
  10,6,MSG,53,0,0,0,0,0,CMD,24,0,0,0,0,0,JRNL,1,0,0,0,0,0,TIME,0,0,0,0,0,0,
  ALRT,0,0,0,0,0,0,EXT,0,0,0,0,0,0,IMS,0,0,0,0,0,0,CICS,0,0,0,0,0,0,DB2,0,0,
  0,0,0,0,JES3,0,0,0,0,0,0,ALRM,0,0,0,0,0,0,VAR,0,0,0,0,0,0,MQS,0,0,0,0,0,0,EOR

```

Tracking MAINVIEW AutoOPERATOR ALERTS (ALRT)

This table describes the data collected for the record type ALRT (MAINVIEW AutoOPERATOR ALERTs), subtype ONLY. ALRT records are collected in intervals.

Possible Usage

The ALRT records contain eight fields of data for six ALERT priorities:

Priority Name	Priority Value
Critical	1
Major	2
Minor	3
Warning	4
Informational	5
Clear	6

With the data in these records, you can approximate the average age of an ALERT. This may be especially important data for your Critical ALERTs because you would not want to see Critical ALERTs out on your system for long periods of time.

To approximate the average age of an ALERT

1. Select an ALERT priority: for example; CRITICAL ALERTs.
2. Find the ACTIVE COUNT value to see how many CRITICAL ALERTs were active during an interval. Suppose this value is 50.
3. Find the ACTIVE MINUTES values for these ALERTs to see how long the ALERTs was active. Suppose this value is 100.
4. Divide the time by the number of active ALERTs: 100/50.
5. The average age of a critical ALERT is two minutes.

Note: This value does not include ALERTs that may have been created and deleted during the interval.

Data Item Name	Max. Field Length	Type of Data	Description
ALERT RECORD COUNT	1	Numeric	Number of ALERT priority types within the record
ALERT RECORD DATA COUNT	1	Numeric	Number of fields of data for each ALERT priority
PRIORITY	8	Character	Description of the ALERT priority
PRIORITY	1	Numeric	A numeric representation of the ALERT priority
ACTIVE COUNT	4	Numeric	Total number of ALERTS active at the end of the interval ALERTs that were active and then deleted during the interval are <i>not included in this count</i> .
CREATED COUNT	4	Numeric	Total number of ALERTS created (during the interval)
DELETED COUNT	4	Numeric	Total number of ALERTS deleted (during the interval) The number of ALERTs that were active during the interval but deleted before the end of the interval are not included in the ACTIVE COUNT numbers.
ACTIVE MINUTES	4	Numeric	Total number of active minutes for ALERTs that are still active at the end of the interval (when the ACTIVE COUNT values are calculated) This value does not include ALERTs that may have been created and deleted during the course of the interval.
EXEC FOLLOW UP COUNT	4	Numeric	ALERTs with follow-up EXEC
SENT TO PATROL Enterprise Manager COUNT	4	Numeric	ALERTs sent to PATROL Enterprise Manager

Figure 12-2 is a sample data record for ALRT for four intervals.

Figure 12-2 Sample Data Record for ALRT, Subtype=ONLY

/* SAMPLE RECORD FOR TYPE ALRT, SUB TYPE ONLY */			
SYSC, AOIA, 410, BBPlex01, "19970528", "19:00", 10, ALRT, ONLY, "19970528", "19:00",	6, 8, CRITICAL, 1, 0, 0, 0, 0, 0, 0, MAJOR, 2, 0, 0, 0, 0, 0, 0, MINOR, 3, 0, 0, 0, 0, 0, 0,	WARN, 4, 2, 0, 0, 971, 0, 0, INFO, 5, 0, 0, 0, 0, 0, 0, CLEAR, 6, 0, 0, 0, 0, 0, 0, EOR	
SYSC, AOIA, 410, BBPlex01, "19970528", "18:50", 10, ALRT, ONLY, "19970528", "18:50",	6, 8, CRITICAL, 1, 0, 0, 0, 0, 0, 0, MAJOR, 2, 0, 0, 0, 0, 0, 0, MINOR, 3, 0, 0, 0, 0, 0, 0,	WARN, 4, 2, 0, 0, 951, 0, 0, INFO, 5, 0, 0, 0, 0, 0, 0, CLEAR, 6, 0, 0, 0, 0, 0, 0, EOR	
SYSC, AOIA, 410, BBPlex01, "19970528", "18:40", 10, ALRT, ONLY, "19970528", "18:40",	6, 8, CRITICAL, 1, 0, 0, 0, 0, 0, 0, MAJOR, 2, 0, 0, 0, 0, 0, 0, MINOR, 3, 0, 0, 0, 0, 0, 0,	WARN, 4, 2, 0, 0, 931, 0, 0, INFO, 5, 0, 0, 0, 0, 0, 0, CLEAR, 6, 0, 0, 0, 0, 0, 0, EOR	
SYSC, AOIA, 410, BBPlex01, "19970528", "18:30", 10, ALRT, ONLY, "19970528", "18:30",	6, 8, CRITICAL, 1, 0, 0, 0, 0, 0, 0, MAJOR, 2, 0, 0, 0, 0, 0, 0, MINOR, 3, 0, 0, 0, 0, 0, 0,	WARN, 4, 2, 0, 0, 911, 0, 0, INFO, 5, 0, 0, 0, 0, 0, 0, CLEAR, 6, 0, 0, 0, 0, 0, 0, EOR	

Tracking Events (EVENT)

This table describes the data collected for the record type EVNT (MAINVIEW AutoOPERATOR Events), subtype ONLY. There is no subtype for this record (denoted as SUBTYPE=ONLY). EVNT records are collected cumulatively.

Possible Usage

Use the **EVENT COUNT** and **HANDLED COUNT** of this data record to track information about how many Events occur and how many get handled (or automated) over periods of time.

For example, you might gather data once a day for several days before you implement new or additional automation and collect data after additional automation is implemented. By comparing the differences in these two fields you can see how the new automation is increasing the number of handled events.

You also can use this record to determine the sum of handled Events (**HANDLED COUNT**) and divide that by the **EVENT COUNT**, yielding a percentage of the Event activity handled by automation.

If this percentage drops sharply, you'll know to check if you have added an application that produces a lot of Events that are not handled by automation.

Data Item Name	Max. Field Length	Type of Data	Description
TEXT-ID	8	Character	Text ID (or first word) of the Event
EVENT COUNT	4	Numeric	Total number of Event occurrences
HANDLED COUNT	4	Numeric	Total number of times the Event was handled (in other words, the number of times the Event triggered and fired a Rule)
EVENT TYPE	4	Character	Type (or origin) of the Event
PARTIAL TEXT	50	Character	Partial Event text (contains the first 50 characters of the Event text)
PEAK ARRIVAL	4	Numeric	Peak arrival rate of the Event per interval

Figure 12-3 is a sample data record for EVNT for two data collection intervals.

Figure 12-3 Sample Data Record for EVNT, Subtype=ONLY

```
/* SAMPLE RECORD FOR TYPE EVNT, SUB TYPE ONLY          */
SYSC,AOIA,410,BBPLEX01,"19970529","08:13",76,EVNT,ONLY,"19970529","09:29",
    "PM0221I",1,0,JRNL,"NO MULTIPLE SYSTEM APPLID SPECIFIED",27,EOR
SYSC,AOIA,410,BBPLEX01,"19970529","08:13",76,EVNT,ONLY,"19970529","09:29",
    "PM0216I",5,0,MSG,"BBI CONNECTIONS COMPLETED FOR 000 LINK(S)JO2X",27,EOR
```

Tracking MAINVIEW AutoOPERATOR EXECs (EXEC)

This table describes the data collected for the record type EXEC (MAINVIEW AutoOPERATOR EXECs), subtype ONLY. There is no subtype for this record (denoted as SUBTYPE=ONLY). EXEC records are collected cumulatively.

Possible Usage

With EXEC data records, you might save and track only those that have at least one significant value. For example, you might be interested in those records that show how many times a specific EXEC abended (**ABEND COUNT** field). A recursive abend in a service EXEC can seriously damage automation production and it may be difficult to detect this kind of problem during an online session.

Another important piece of information might be how many EXECs were dropped or not executed. The **DROP COUNT** field shows the number of EXECs that have not been processed, which can be very detrimental if you have automation depending on those EXECs. You may need to increase the number of threads available for EXEC processing, serialize some processes, or even defer some processes.

This record also can be used to analyze EXECs that have a high **RUN COUNT**. You may want to try to convert EXECs that are used frequently to another form of automation such as Rules. Rules generally use less CPU seconds to run and are easier to maintain.

Data Item Name	Max. Field Length	Type of Data	Description
EXEC NAME	8	Character	Name of the EXEC
RUN COUNT	4	Numeric	Total number of times the EXEC was run
TOTAL CPU SECONDS	4	Numeric (seconds)	Total seconds of CPU consumed by EXEC
MAX CPU SECONDS	8	Numeric (seconds)	Maximum amount of CPU used by this EXEC
ABEND COUNT	4	Numeric	Total number of times an EXEC abended
DROP COUNT	4	Numeric	Total number of EXECs dropped
QUEUED COUNT	4	Numeric	Total number of times this EXEC was queued
MAXIMUM QUEUED COUNT	4	Numeric	Maximum number of queued EXECs

Figure 12-4 is a sample data record for EXEC for two data collection intervals.

Figure 12-4 Sample Data Record for EXEC, Subtype=ONLY

```

/* SAMPLE RECORD FOR TYPE EXEC, SUB TYPE ONLY */
SYSC,AOIA,410,BBPLEX01,"19970529","08:12",77,EXEC,ONLY,"19970529",
"09:29",ARTHRESH,5,4,1,0,0,0,0,EOR
SYSC,AOIA,410,BBPLEX01,"19970529","08:12",77,EXEC,ONLY,"19970529",
"09:29",MSGMULEB,192,13,0,0,0,0,0,EOR

```

Tracking MAINVIEW AutoOPERATOR Rules Activity (RULE)

This table describes the data collected for the record type RULE (MAINVIEW AutoOPERATOR Rules), subtype ONLY. These records are collected cumulatively.

Possible Usage

By selecting and sorting the RULE data records for a specific Rule, you can find out how often a Rule is fired and then move Rules that are fired more often to be higher up in the Rule Set or even into a new Rule Set. Use a search strategy of FIRST and you can cut down on the amount of search time used for every incoming Event.

For example, if you sort the records collected over a period of days or weeks based on the **FIRED COUNT** field, you are able to determine which Rules get fired most often. Move these Rules up in the Rule Set (or into a new Rule Set) and use an Automation Strategy of **FIRST**, and you lessen the time used for searching for a match between incoming Events and Rules.

Data Item Name	Max. Field Length	Type of Data	Description
RULE NAME	8	Character	Rule name (Rule ID)
FIRED COUNT	4	Numeric	Fired count of the Rule (in other words, how many times the Rule fired during the interval)
SET NAME	8	Character	Rule Set name that the Rule belongs to
GROUP	8	Character	Rule documentation field: Group
FUNCTION	8	Character	Rule documentation field: Function
CODE	2	Character	Rule documentation field: Code
EXEC NAME	8	Character	Name of the EXEC that was scheduled by the Rule (if applicable)
EVENT TYPE	4	Character	Event type (ORIGIN) of the Rule

Figure 12-5 is a sample data record for RULE for four data collection intervals.

Figure 12-5 Sample Data Record for RULE, Subtype=ONLY

```

/* SAMPLE RECORD FOR TYPE RULE, SUB TYPE ONLY          */
SYSC,AOIA,410,BBPLEX01,"19970529","09:55",11,RULE,ONLY,"19970529","10:06",
"ARSTART",1,AAORULPM,REPORTER,START,,JRNLEOR
SYSC,AOIA,410,BBPLEX01,"19970529","09:55",11,RULE,ONLY,"19970529","10:06",
"RUL00001",0,AAORULPM,,,,JRNLEOR
SYSC,AOIA,410,BBPLEX01,"19970529","09:55",11,RULE,ONLY,"19970529","10:06",
"RUL00002",1,AAORULPM,,,,JRNLEOR
SYSC,AOIA,410,BBPLEX01,"19970529","09:55",11,RULE,ONLY,"19970529","10:06",
"ARGPTRS",1,AAORULPM,REPORTER,,,,JRNLEOR

```


Tracking MAINVIEW AutoOPERATOR Rule Sets (RULESET: AUTO)

This table describes the data collected for the record type RULESET (MAINVIEW AutoOPERATOR Rule Sets), subtype AUTO. These records are collected cumulatively.

Data Item Name	Max. Field Length	Type of Data	Description
AUTOMATION STRATEGY	10	Character	Automation strategy
HONOR MPF	3	Character	Whether HONORMPF was set to YES or NO
AUTOMATION STATUS	8	Character	Current automation status (ACTIVE/INACTIVE)

Figure 12-6 is a sample data record for RULESET, subtype AUTO, for four data collection intervals.

Figure 12-6 Sample Data Record for RULESET, Subtype=AUTO

```

/* SAMPLE RECORD FOR TYPE RULESET, SUB TYPE AUTO      */
SYSC,AOIA,410,BBPLEX01,"19970529","08:12",77,RULESET,AUTO,"19970529","09:29",
INDIVIDUAL,NO,ACTIVE,EOR
SYSC,AOIA,410,BBPLEX01,"19970529","09:55",11,RULESET,AUTO,"19970529","10:06",
INDIVIDUAL,NO,ACTIVE,EOR

```

Tracking MAINVIEW AutoOPERATOR Rule Sets (RULESET: SET)

This table describes the data collected for the record type RULESET (MAINVIEW AutoOPERATOR Rule Sets), subtype SET. These records are collected cumulatively.

Possible Usage

Use this record to determine ratios such as how many messages were seen by the Rules Processor versus how many of these messages were handled by Rules.

To do this, examine the value in the **FILTER COUNT** field which shows the number of events that match Rule Set Selection Criteria. Compare this against the **FIRED COUNT** field. What you see is the total number of events seen by the MAINVIEW AutoOPERATOR Rules Processor and the number of messages that were handled by Rules. Based on these numbers, you can better analyze if you need to write more Rules to handle events coming through the Rules Processor.

You also can look at the **FILTER COUNT** and **FIRED COUNT** fields to determine if you need to alter the order of your Rule Sets. If you find high numbers in the **FILTER COUNT** field and low numbers (or even zeroes) in the **FIRED COUNT** field, you are seeing a lot of searching through your Rule Sets but very few matches to Rules.

A possible remedy for this type of situation is to use Rule Set filtering criteria as described in “Filtering Events for Rule Sets” on page 9-12. The scanning of entire Rule Sets for an event that does not match any events in the Rule Set is prevented. You can also rearrange your Rule Sets to lessen the search time.

Data Item Name	Max. Field Length	Type of Data	Description
SET NAME	8	Character	Rule Set name
RULE COUNT	2	Numeric	Total number of Rules in the Rule Set
FIRED COUNT	4	Numeric	Total number of times that Rules within the Rule Set were fired during the interval
FILTER COUNT	8	Numeric	Total number of events that match and pass through filter criteria
SET ENABLE DATE	8	date "yyyymmdd"	Rule Set ENABLED date
SET ENABLE TIME	5	time "hh:mm"	Rule Set ENABLED time
SET STRATEGY	8	Character	Rule Set Strategy; can be FIRST, ALL, or INDIVIDUAL

Figure 12-7 is a sample data record for RULESET, subtype SET, for three data collection intervals.

Figure 12-7 Sample Data Record for RULESET, Subtype=SET

```

/* SAMPLE RECORD FOR TYPE RULESET, SUB TYPE SET      */
SYSC,AOIA,410,BBPLEX01,"19970529","08:12",77,RULESET,SET,"19970529",
    "09:29",AAORULJB,34,192,2198,"19970529","08:13",FIRST,EOR
SYSC,AOIA,410,BBPLEX01,"19970529","09:55",11,RULESET,SET,"19970529",
    "10:06",AAORULPM,5,1,760,"19970529","09:57",ALL,EOR
SYSC,AOIA,410,BBPLEX01,"19970529","09:55",11,RULESET,SET,"19970529",
    "10:06",RULAR001,6,0,760,"19970529","09:57",ALL,EOR

```

Tracking Resources (RES)

This table shows the data collected for the record type RESOURCE. There is no subtype for this record (denoted as SUBTYPE=ONLY). RES records are collected in intervals.

Data Item Name	Max. Field Length	Type of Data	Description
PRIVATE STORAGE BELOW	16	Numeric	Private storage allocated by the SS (bytes current allocation) at the end of the interval
PRIVATE STORAGE ABOVE	16	Numeric	Private storage allocated by the SS (bytes current allocation) at the end of the interval
CSA PQE COUNT	8	Numeric	Total number of low storage PQEs at the end of the interval
CSA PQE BYTES	16	Numeric	Bytes of low storage in use by PQEs at the end of the interval
ECSA PQE COUNT	8	Numeric	Total number of high storage PQEs at the end of the interval
ECSA PQE BYTES	16	Numeric	Bytes of high storage in use by PQEs at the end of the interval
TOTAL CSA PQES	8	Numeric	Count of PQEs created this interval
TOTAL ECSA PQES	8	Numeric	Count of extended PQEs created this interval
VARIABLE COUNT CSA	8	Numeric	Total number of variables in CSA at the end of the interval
VARIABLE BYTES CSA	16	Numeric	Total number of bytes of CSA storage in use by variables at the end of the interval
NEW CSA VARIABLES COUNT	8	Numeric	New variables created in CSA storage during this interval
SUBSYSTEM CPU SECONDS	8	Numeric (seconds)	Subsystem CPU seconds used this interval
SSR SECONDS	8	Numeric (seconds)	Subsystem-request CPU seconds requested by address spaces which fired Rules during the interval
EXCP COUNT	8	Numeric	EXCP count this interval
TS USERS	4	Numeric	Total number of TS users at data collection time
TRANSACTION COUNT	6	Numeric	Transactions issued this interval by terminal session users
CPUS ONLINE	2	Numeric	Total number of CPUs online at data collection time

Figure 12-8 is a sample data record for RES for two intervals.

Figure 12-8 Sample Data Record for RES, Subtype=ONLY

```

/* SAMPLE RECORD FOR TYPE RES, SUB TYPE ONLY */
SYSC,AOIA,410,BBPLEX01,"19970528","18:50",10,RES,ONLY,"19970528","18:50",
1847296,937984,0,0,0,0,0,277,47,4413,0,1,2,207,0,0,02,EOR
SYSC,AOIA,410,BBPLEX01,"19970528","18:40",10,RES,ONLY,"19970528","18:40",
1847296,937984,0,0,0,0,0,544,47,4413,0,2,7,207,0,0,02,EOR

```

Tracking Tape Device Sharing Activity (TAPE: LOCAL)

This table shows the data collected for the record type TAPE (TapeSHARE for MAINVIEW AutoOPERATOR component), subtype LOCAL. These records are collected in intervals.

One LOCAL record is created per interval. If 10 partners are participating in tape sharing activity with TapeSHARE at the end of the interval, you must save and collect the Automation Reporter TAPE: LOCAL records from each partner individually.

Therefore, note that the information described here is for a single partner in a TapeSHARE PLEX where TapeSHARE is performing tape device sharing automation for a group of partners

Data Item Name	Max. Field Length	Type of Data	Description
ALLOCATION REQUESTS	12	Numeric	Number of times this partner requested that TapeSHARE find one or more devices for the partner to use
ALLOCATION REQUESTS SATISFIED	12	Numeric	Number of times that TapeSHARE was able to satisfy this partner's request for a device
TOTAL DEVICE REQUESTS	12	Numeric	Number of devices that TapeSHARE obtained from other partners for this partner to use
TAKES NOT GIVEN TO THE REQUESTING JOB	12	Numeric	Number of times a device was TAKEN from another partner but not GIVEN to the requesting job In other words it's the number of times the partner requested a device and a device was found but the partner did not end up receiving the device. This could happen because the request timed out before the partner could actually TAKE the device.
TOTAL TIME NEEDED FOR A TAKE	12	Numeric	Amount of time (in seconds) this partner spent waiting for a device
REQUEST FOR GIVES	12	Numeric	Number of times other partners requested to share devices from this partner
GIVES	12	Numeric	Number of times this partner actually GAVE devices to other partners
TOTAL DEVICES GIVEN	12	Numeric	Number of devices that were GIVEN by this partner to other partners
SUCCESSFUL TAKE: TOTAL TIME	12	Numeric	Amount of time (in seconds) that a partner spent asking for devices and receiving them
SUCCESSFUL TAKE: RETRY TIME	12	Numeric	Amount of time (in seconds) spent in retrying to complete a successful TAKE
SUCCESSFUL TAKE: RETRY COUNT	12	Numeric	Number of retry attempts that were made and a successful TAKE was completed

Data Item Name	Max. Field Length	Type of Data	Description
FAILED TAKE: TOTAL TIME	12	Numeric	Amount of time (in seconds) that a partner spent asking for devices and did not receive any devices
FAILED TAKE: RETRY TIME	12	Numeric	Amount of time (in seconds) spent in retrying to complete a TAKE but was unsuccessful
FAILED TAKE: RETRY COUNT	12	Numeric	Number of retry attempts that were made and a TAKE was unsuccessful
TIMED OUT: REQUESTS	12	Numeric	Number of requests that could not be satisfied because the request timed out

Figure 12-9 is a sample data record for TAPE: LOCAL for one interval.

Figure 12-9 Sample Data Record for TAPE, Subtype=LOCAL

```

/* SAMPLE RECORD FOR TYPE TAPE, SUB TYPE LOCAL          */
SYSC,DSHC,410,LOCAL,"19970620","18:00",10,TAPE,LOCAL,"19970620","18:00",
1,15,0,0,0,0,0,0,0,0,0,0,0,0,120,DEFAULT,EOR

```

Tracking Tape Device Sharing Activity (TAPE: PLEX)

This table shows the data collected for the record type TAPE (TapeSHARE for MAINVIEW AutoOPERATOR component), subtype PLEX. These records are collected in intervals.

This record contains information about partner to partner communication such as how often a partner requested devices from the other partners, how long it took for a device to be shared, and so on.

Data Item Name	Max. Field Length	Type of Data	Description
NUMBER OF PARTNERS	8	Numeric	<p>Number of partners that were in the TapeSHARE PLEX when the data was collected</p> <p>For every partner in this record, statistics will be kept in subsections of this record. The PARTNER NODE NAME field separates each subsection.</p> <p>Each subsection has 9 fields of data (see the field for NUMBER OF FIELDS FOR THIS PARTNER). If this value is 6, there will be 6 subsections of data.</p>
NUMBER OF FIELDS FOR THIS PARTNER	2	Numeric	Number of fields of data for this partner
PARTNER NODE NAME	8	Character	Node name of the partner
TARGET PARTNER NAME	8	Character	Name of the TapeSHARE partner
TARGET SMF NAME	8	Character	SMF system name of the target partner
SYSPLEX NAME	4	Character	MVS SYSPLEX name of this partner as defined in the ECVT control block
TARGET SSID NAME	4	Character	SSID (subsystem ID) of the target partner
AO VERSION LEVEL	5	Numeric	<p>Version level of MAINVIEW AutoOPERATOR running on the target partner</p> <p>This level is the same value as in the header portion of the record.</p>
TAPESHARE LEVEL	1	Numeric	Internal level of TapeSHARE that is running on the target partner
TIME WAITED	12	Numeric	The amount of time (in seconds) spent waiting for a TAKE
TAKE REQUESTS	12	Numeric	The number of TAKE requests made from this target
SUCCESSFUL TAKES	12	Numeric	The number of successful TAKE requests made for this target
GIVE REQUESTS	12	Numeric	The number of GIVE requests made from this target
SUCCESSFUL GIVES	12	Numeric	The number of successful GIVE requests made for this target

Figure 12-10 is a sample data record for TAPE: PLEX for one interval.

Figure 12-10 Sample Data Record for TAPE, Subtype=PLEX

```
/* SAMPLE RECORD FOR TYPE TAPE, SUB TYPE PLEX          */
SYSC,DSHC,410,LOCAL,"19970620","18:00",10,TAPE,PLEX,"19970620","17:50",
  2,12,"SYSG","SYSG","$GCIS","$GCIS","$GCIS","410",0,0,1,1,3,1,
  "SYSF","SYSF","$FCIS","$FCIS","$FCIS","410",0,0,1,0,0,0,EOR
```

Chapter 13 Managing EXECs Using the EXEC Management Application

The EXEC Management application allows you to enable, disable, schedule, browse, and test the MAINVIEW AutoOPERATOR EXECs that you have stored in your SYSPROC or SYSEXEC concatenation.

Important
MAINVIEW AutoOPERATOR EXECs where you have specified DISP(NO) in the documentation box of the EXEC <i>do not</i> appear in this application.

For more information about MAINVIEW AutoOPERATOR EXECs, including documentation boxes, refer to the *MAINVIEW AutoOPERATOR Advanced Automation Guide*.

Introduction

This chapter describes the EXEC Management application and how you can use it. The EXEC Management application allows you to

- schedule an EXEC to run
- select an EXEC for testing
- browse the contents of an EXEC
- enable and disable currently executing EXECs

The EXEC Management application also allows you to see things such as:

- how many EXECs you have currently executing
- which EXECs are currently executing
- how many EXECs you have queued to Normal or High priority queues
- how many times a specific EXEC has executed since the last subsystem start
- how much CPU time a specific EXEC has used
- how many times a specific EXEC has abended

Every time an EXEC is executed in MAINVIEW AutoOPERATOR, CPU consumption statistics are saved. The only conditions where statistics are not kept for a specific EXEC is where the EXEC is initiated using

- the TSO command EX (for example, **TSO EX EXECABC**)
- the REXX CALL command
- the CLIST SYSCALL command

The CPU time used for these EXECs is added to the calling EXEC.

Individual statistics also are not kept for EXECs called as external REXX functions.

Accessing the EXEC Management Application

This section describes the EXEC Management application and its two views, which you can see by scrolling left and right. “Displaying Currently Active EXECs” on page 13-10 describes the application when you use the EXPAND primary command to see statistics for only currently active EXECs.

Select Option 8 from the Primary Option Menu and Option 7 from the Automation Menu to display the EXEC Management panel as shown in Figure 13-1.

Figure 13-1 EXEC Management Panel with EXEC Description—Documentation View

BMC Software ----- EXEC Management -----				MAINVIEW AutoOPERATOR		
COMMAND ==>				TGT ==> FK5X		
INTERVAL ==> 3				DATE --- 01/03/16		
STATUS --- INPUT		Scroll right/left		TIME --- 16:04:59		
Primary command: Sort						
EXECs defined		418	Scheduled	11	Enabled 418	
High Priority running		0	Queued	0		
Norm Priority running		0	Queued	0		
PRESS EXPAND TO VIEW EXEC ACTIVITY						
(B)ROWSE, (E)NABLE, (D)ISABLE, E(X)ECUTE EXEC, (T)EST EXEC						
LC	NAME	STATUS	GROUP	FUNCTION CODE	AUTHOR	DESCRIPTION
___	\$AAA	ENABLED	TEST	QUEUE	CIM4X	TEST THRESHOLD
___	\$COLORS	ENABLED	DEMO	LOOP	CIM4	TEST SELECT EXEC WITHIN A
___	\$DFS970I	ENABLED			\$AOSRLO	
___	\$HASP373	ENABLED			JDB1	
___	\$HASP605	ENABLED			CIM4X	
___	\$IM9175I	ENABLED			CIM4X	
___	\$SEND	ENABLED			CIM4	
___	@CATCHU1	ENABLED			CIM1	
___	@CHE	ENABLED			CIM4X	

The middle portion of the panel shows statistics about all the EXECs. Refer to Figure 13-3 on page 13-5 for more information about these fields.

The bottom portion of the panel shows the documentation information that was included when the EXEC was first coded.

You can qualify the display to show subsets of the list with the input fields below each column heading. For example, you can enter **D** in the **STATUS**, and the display shows only those EXECs that are **DISABLED**.

Scroll right to see more information about the EXECs, such as how many times an EXEC has executed, how much CPU it has used, how many times it has abended, and so on.

Scrolling Right to Display Additional Information

Figure 13-2 shows an example of the panel when you scroll right.

Figure 13-2 EXEC Management Panel with EXEC Statistics—Resource View

```

BMC Software ----- EXEC Management ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                     TGT ==> FK5X
INTERVAL ==> 3                                DATE --- 01/0316
STATUS --- INPUT                               Scroll right/left    TIME --- 16:05:04
Primary command: Sort
      EXECs defined      418      Scheduled      11      Enabled      418
High Priority running      0      Queued      0
Norm Priority running      0      Queued      0

PRESS EXPAND TO VIEW EXEC ACTIVITY
B)ROWSE, (E)NABLE, (D)ISABLE, E(X)ECUTE EXEC, (T)EST EXEC

LC  NAME      STATUS      EXECD      ABEND      TOTCPU      AVGCPU      MAXCPU      CHANGED
___  _____  -
___  $AAA      ENABLED                                00/11/04 16:14
___  $COLORS   ENABLED                                00/10/25 17:33
___  $DFS970I  ENABLED                                00/11/01 15:54
___  $HASP373  ENABLED                                00/03/22 15:00
___  $HASP605  ENABLED                                00/07/30 15:01
___  $IM9175I  ENABLED                                00/11/18 18:38
___  $SEND     ENABLED                                00/01/25 15:28
___  @CATCHU1  ENABLED                                00/08/13 23:35
___  @CHE      ENABLED      1                                .08      .08  00/03/12 19:19
___  @DAILY    ENABLED                                00/04/12 11:49

```

This panel shows individual statistics for each EXEC, such as how many times an EXEC was executed, how many times it abended, and so on.

Similar to View 1 of the panel, you can use the input fields under the column headings to qualify the display and show a subset of all the EXECs.

Viewing All Currently Active EXECs: Using the EXPAND Command

The EXEC Management application also has a panel that displays information for all currently executing EXECs. To see this panel, use the EXPAND primary command to display only those EXECs that are currently running and track the progress of those EXECs.

“Displaying Currently Active EXECs” on page 13-10 contains more information about using this panel. The EXPAND command toggles the display between the EXEC Management panels.

Using Primary Commands

You can use the following primary commands on the COMMAND line of this panel.

Command	Description
EXPAND	Toggles the display between the EXEC Description portion of the panel and the EXEC Activity portion that shows only the EXECs currently running
GO	Starts the panel refresh
SORT	Allows you to sort the display of EXECs in either ascending or descending order

The default is descending for all numeric fields. For example, all values in the **SCHED** field are sorted with the largest values at the top of the display.

The default is ascending for all alphanumeric fields.

Describing Fields in the EXEC Status Area

Following is a description of the status area of the EXEC Management panel (see Figure 13-3). This area appears on all EXEC Management panels.

Figure 13-3 Example of the Status Area of the EXEC Management Panel

EXECs defined	465	Scheduled	115	Enabled	465
High Priority running	0	Queued	0		
Norm Priority running	0	Queued	0		

Field Name	Description
EXECs defined	<p>Is the total number of EXECs that are written to the SYSPROC concatenation.</p> <p>This number includes EXEC that specify DISP(NO) in the documentation box but these EXECs are not displayed in the bottom portion of the panel.</p>
Scheduled	<p>Is the number of all the EXECs which have been scheduled to run since the last subsystem start. A REXX program executed through a CALL statement is not counted.</p>
Enabled	<p>Is the number of EXECs enabled.</p>
High Priority	<p>Shows information about EXECs scheduled to run in high priority; for example:</p> <p>Running Number of EXECs currently executing on high priority threads</p> <p>Queued Number of EXECs queued to run on high priority threads</p>
Norm Priority	<p>Shows information about EXECs scheduled to run in normal priority; for example:</p> <p>Running Number of EXECs currently executing on normal priority threads</p> <p>Queued Number of EXECs queued to run on normal priority threads</p>

Describing Fields in the EXEC Description Area

The bottom portion of the panel contains one of the following items list:

- a list of defined EXECs and their EXEC Descriptions (as seen in View 1 in Figure 13-4 on page 13-7)
- a list of defined EXECs and information regarding how much CPU each EXEC has used, how many times an EXEC has abended, and so on (as seen in View 2 in Figure 13-5 on page 13-9)
- a list of currently active EXECs and related statistics (if you use the EXPAND command); see Figure 13-4 on page 13-7 and Figure 13-5 on page 13-9

Describing Fields in View 1

The EXEC Description area fields of View 1 are shown in Figure 13-4.

Figure 13-4 Bottom Portion of EXEC Management Panel—Documentation View

PRESS EXPAND TO VIEW EXEC ACTIVITY							
B)ROWSE, (E)NABLE, (D)ISABLE, E(X)ECUTE EXEC, (T)EST EXEC							
LC	NAME	STATUS	GROUP	FUNCTION	CODE	AUTHOR	DESCRIPTION
___	\$AAA	ENABLED	TEST	QUEUE		CIM4X	TEST THRESHOLD
___	\$COLORS	ENABLED	DEMO	LOOP		CIM4	TEST SELECT EXEC WITHIN
A							
___	\$DFS970I	ENABLED				\$AOSRLO	
___	\$HASP373	ENABLED				JDB1	
___	\$HASP605	ENABLED				CIM4X	
___	\$IM9175I	ENABLED				CIM4X	
___	\$SEND	ENABLED				CIM4	
___	@CATCHU1	ENABLED				CIM1	
___	@CHE	ENABLED				CIM4X	

The first line of this area

PRESS EXPAND TO VIEW EXEC ACTIVITY

indicates you can use the EXPAND command to view the EXEC activity of all currently active EXECs. Use the EXPAND command by assigning a PF key to EXPAND, or typing **EXPAND** on the **COMMAND** line and pressing **Enter**.

You can enter the following line commands in the **LC** column.

Command	Description
BROWSE B	used to browse the complete contents of an EXEC
ENABLE E	used to enable the EXEC
DISABLE D	used to disable the EXEC
EXECUTE X	used to submit the EXEC and, optionally, specify parameters
TEST T	used to select the EXEC for testing with the EXEC Testing application

Refer to the *MAINVIEW AutoOPERATOR Advanced Automation Guide* for more information about EXEC Testing.

The EXEC Description area fields of View 1 are as follows:

Field Name	Description
LC	Allows you to enter a one character line command.
NAME	Is the name of the EXEC (member name in SYSPROC). You can qualify the display by EXEC name.
STATUS	Is the current status of the EXEC: can be either ENABLED or DISABLED.
GROUP	Is the group associated with the EXEC as specified in the EXEC documentation section.
FUNCTION	Is the function associated with the EXEC as specified in the EXEC documentation section.
CODE	Is the code associated with the EXEC as specified in the EXEC documentation section.
AUTHOR	Is the author associated with the EXEC as specified by the ISPF statistics. If an AUTHOR is specified in the documentation section, then this name overrides the ISPF data.
Description	Is the description associated with the EXEC as specified in the EXEC documentation section.

Describing Fields in View 2

The EXEC Description area fields of View 2 are shown in Figure 13-5.

Figure 13-5 Bottom Portion of EXEC Management Panel—Resource View

PRESS EXPAND TO VIEW EXEC ACTIVITY								
B)rowse, (E)nable, (D)isable, E(X)ecute EXEC, (T)est EXEC								
LC	NAME	STATUS	EXECD	ABEND	TOTCPU	AVGCPU	MAXCPU	CHANGED
___	\$AAA	ENABLED						00/11/04 16:14
___	\$COLORS	ENABLED						00/10/25 17:33
___	\$DFS970I	ENABLED						00/11/01 15:54
___	\$HASP373	ENABLED						00/03/22 15:00
___	\$HASP605	ENABLED						00/07/30 15:01
___	\$IM9175I	ENABLED						00/11/18 18:38
___	\$SEND	ENABLED						00/01/25 15:28
___	@CATCHU1	ENABLED						00/08/13 23:35
___	@CHE	ENABLED	1			.08	.08	00/03/12 19:19
___	@DAILY	ENABLED						00/04/12 11:49

The EXPAND command and the line commands are explained in “Describing Fields in View 1” on page 13-7.

The EXEC Description area fields of View 2 are

Field	Description
NAME	Is the name of the EXEC (member name in SYSPROC).
STATUS	Is the status of the EXEC, either ENABLED or DISABLED.
EXECD	Is the number of times the EXEC has completed execution. Each time an EXEC completes execution, this count is incremented. Also, if you have a situation where EXECA calls EXECB (with an IMFEXEC SELECT statement and WAIT(YES) is specified), both EXECA and EXECB are counted in the EXECD count when they complete.
ABEND	Is the number of times the EXEC has abended since the SS started.

TOTCPU	Is the sum of CPU time used for all executions of the EXEC since the SS was started. If the EXEC schedules another EXEC (with an IMFEXEC SELECT statement where WAIT(YES) is specified), then CPU collection for the first EXEC is suspended until the selected EXEC returns control. If a REXX EXEC executes another REXX EXEC using the REXX CALL facility, the CPU time is charged to the calling EXEC.
AVGCPU	Is the value of the TOTCPU divided by the EXECD value (TOTCPU/EXECD) since the BBI-SS PAS was last started.
MAXCPU	The greatest amount of CPU time the EXEC used during any single execution since the BBI-SS PAS was last started.
Changed	The date and time that the EXEC was last changed. This information will not be shown if SPF STATS is turned off.

Displaying Currently Active EXECs

By using the EXPAND command, you can toggle between the panel views shown in Figure 13-1 on page 13-3 and in Figure 13-2 on page 13-4 and Figure 13-6 on page 13-10.

Figure 13-6 EXEC Management Display of All Currently Active EXECs.

```

BMC Software ----- EXEC Management ----- MAINVIEW AutoOPERATOR
COMMAND ==>                                     TGT ==>  AOJB
INTERVAL ==> 3                                   DATE --- 01/03/17
STATUS --- INPUT                               Scroll right/left    TIME --- 16:11:49
Primary command: Sort
      EXECs defined      438      Scheduled      10      Enabled      438
High Priority running      0      Queued      0
Norm Priority running      4      Queued      0

                                PRESS EXPAND TO VIEW EXEC DESCRIPTIONS

(C)ANCEL EXEC

LC  NAME      SEQ.# TIME      ORIGIN  TYPE      STATE      CPU  CPU%  CPUL  CPUL%
___ $TOTSIO    7 16:11:47 JDB1     NORMAL    RUNNING    0    0%    1    0%
___ EXECIO     8 16:11:48 JDB1     NORMAL    RUNNING    0    0%    1    0%
___ $TOTCPU    9 16:11:48 JDB1     NORMAL    RUNNING    0    0%    1    0%
___ $JOBCEPU   10 16:11:48 JDB1     NORMAL    RUNNING    0    0%    1    0%
***** END OF EXECs *****

```

This figure shows the EXEC Management panel when you enter the EXPAND primary command to show only the currently active EXECs.

The EXEC status area of this panel is the same as on other EXEC Management panels. Use this panel to see information about the currently active EXECs such as:

- What time the EXEC was executed
- The origin of the EXEC
- How much CPU the EXEC is using

Using Line Commands

You can enter the following line command in the **LC** field.

Command	Description
CANCEL C	Cancel the selected EXEC

Describing Fields

The following list is a description of the fields in the EXEC Activity area.

Field	Description
LC	Allows you to enter a one character line command.
NAME	Is the name of the EXEC (member name in SYSPROC).
SEQ#	Is the sequence number that identifies the EXEC.
TIME	Is the time the EXEC was initiated.
ORIGIN	Is the location where the EXEC was issued.
TYPE	Specifies whether the EXEC is scheduled to run on a Normal priority thread or a High priority thread.
STATE	Specifies if the EXEC is RUNNING or is ENQUEUED. You can cancel the EXEC only when it is RUNNING.
CPU	Is the amount of CPU time used by the EXEC.
CPU%	Is the percentage of CPU used by this EXEC during a 15 second interval.

CPUL	Is the maximum allotted time allowed for running this EXEC.
CPUL%	Is the maximum percentage of CPU allocated to this EXEC during a 15 second reporting interval.

Documenting Your EXECs

Use the EXEC information line to classify EXECs by GROUP, FUNCTION, CODE, DESCRIPTION, DISPLAY, or AUTHOR. Then you can structure solutions or EXECs to automate your data center. The EXEC information line is specified within each EXEC and has the following format:

```
/* DOC GROUP() FUNC() CODE() DESC() DISP() AUTHOR()*/
```

where

GROUP	Designates the first hierarchical level in 1- to 8 alphanumeric characters.
FUNC	Designates the second hierarchical level in 1- to 8 alphanumeric characters.
DESC	Provides a minimal description of the EXEC's purpose in 1- to 25 alphanumeric characters.
DISP	Indicates whether the EXEC should appear in a formatted member list; Y or N.
CODE	Is a two-character user assigned code.
AUTHOR	Overrides the ISPF author statistic in 1- to 8-alphanumeric characters.

When an EXEC has a /*DOC statement, the EXEC Management application displays the values specified in the EXEC Description display. The information line can be located anywhere in the EXEC. It can be split over any number of physical lines.

Chapter 14 General Services

The BBI General Services are common to all BMC Software products that use BBI-2. They are listed on the Primary Option Menu as

Figure 14-1 General Services Options on the Primary Option Menu

```
⋮  
General Services:  
  C Cycle  
  J Journal  
  M Messages and Codes  
⋮
```

Each of these options is described separately in the following sections.

Creating Cyclic Displays: CYCLE SETUP

Use the CYCLE SETUP option to specify 10 or fewer cyclic displays.

The SERVICE REFRESH CYCLE panel is shown in Figure 14-2 on page 14-2.

Figure 14-2 SERVICE REFRESH CYCLE Panel

BMC Software -- -		SERVICE REFRESH CYCLE				GENERAL SERVICES	
COMMAND ==>						TGT ==>	CICSPROD
						PAGE	1 OF 1
SERVICE ==>	MFSUT	TARGET	TYPE	DTIME	LOG	DESCRIPTION	
PARMS ==>		IMSPROD	IMS	3		MFS POOL UTILIZATION	
SERVICE ==>	DUSER	DB2A	DB2	3		DETAIL USER STATUS	
PARMS ==>							
SERVICE ==>	DA	SYSA	MAO	3		DISPLAY ACTIVE	
PARMS ==>							
SERVICE ==>	FILE	CICSPROD	CICS	5		FILE DISPLAY	
PARMS ==>	* OPEN						
SERVICE ==>	STAT	CICSP	CICS	3		SYSTEM STATUS	
PARMS ==>							
SERVICE ==>							
PARMS ==>							
SERVICE ==>							
PARMS ==>							
SERVICE ==>							
PARMS ==>							
SERVICE ==>							
PARMS ==>							

The input fields are defined as follows.

Input Field

Description

SERVICE

service select code, such as ALERTS or EMA

Note: If other products are installed, services and target types (AO, CICS, CAO, IAO, IMS, DB2, or MAO) can be intermixed. The available service select codes are listed in Table 14-1 on page 14-3.

TARGET

one- to eight-character identifier of the target

If TARGET and TYPE are not specified, the target displayed in the TGT field is used. If TARGET is not specified but TYPE is, the current target for the specified product line is used.

TYPE	<p>type of product line to process the requested service</p> <p>A product line type does not need to be entered when only one product line is installed. If a product line is not specified, the product line where CYCLE was invoked is used.</p> <p>When multiple product lines are installed, a product line type must be specified if the service to be requested does not belong to the active product line.</p>
DTIME	<p>The number of seconds the specified service display is to be shown before the next display. If a time is not entered, the default specified by the INTERVAL parameter in the BBPROF data set member BBITSP00 is used and displayed in the DTIME field. The BMC Software distributed value is 3 seconds.</p> <p>If the maximum of 30 services is specified, each with a display time (DTIME) of 3 seconds, the first service in the refresh cycle is displayed approximately every 90 seconds.</p>
LOG	<p>(For IMF and MAINVIEW for DB2 services)</p> <p>Enter a Y (YES) or N (NO) to log screen images to the BBI-TS Image log for offline printing. The default, N, is displayed if no entry is made. A dash (—) displayed in this field indicates that Image logging is not supported for the requested service.</p>

Specifying Application Names in CYCLE SETUP

You can display the following applications in cycle mode:

Table 14-1 Service Select Codes for Refresh Cycle SERVICE Field (Part 1 of 6)

Service Select Code	Application Description	Product Line (Type)
MAINVIEW AutoOPERATOR Base Applications		
ALE ALERTS	ALERTS Overview	AO
EMA	EXEC Management	AO
EXEC	EXEC Management	AO
RUL RULES	Automation Control	AO
XAL XALRTS	Alert Detail	AO
BBI (General) Applications		
JOU (to see the BBI Log Display)	LOG Display	
LOG	LOG Display	

Table 14-1 Service Select Codes for Refresh Cycle SERVICE Field (Part 2 of 6)

Service Select Code	Application Description	Product Line (Type)
CICS Operator Workstation (MAINVIEW AutoOPERATOR) Applications		
STATUS CAO	CICS System Status	CAO
IMS Operator Workstation (MAINVIEW AutoOPERATOR) Applications		
EX	Status/Exception	IAO
REGION	IMS Regions	IAO
STATUS	Status/Exception	IAO
MVS Operator Workstation (MAINVIEW AutoOPERATOR) Applications		
DA	Address Spaces	MAO
DISP DISPLAY	Address Spaces	MAO
ENQ ENQUEUE	Enqueue/Reserve	MAO
OPER OPERATOR	Operator Requests	MAO
OR	Operator Requests	MAO
REQ REQUESTS	Operator Requests	MAO
RES RESERVES	Enqueue/Reserve	MAO
STATUS	System Status	MAO
MAINVIEW for CICS Applications		
AB ABEND	ABEND Display	CICS
AI AID	AID Display	CICS
AL ALIAS	ALIAS Display	CICS
CLA CLASSES	CLASSES Display	CICS
C CONNECT	CONNECT Display	CICS
CONN CONNX	CONNX Display	CICS
CONNXPN2	CONNXPN2 Display	CICS
CONS CONSOLES	CONSOLES Display	CICS
CST CSTATUS	CSTATUS Display	CICS
DA DATATABL	DATATABL Display	CICS
DB2S DB2SYSP	DB2SYSP Display	CICS
DB2T DB2TASK	DB2TASK Display	CICS
DBC DBCTL	DBCTL Display	CICS
DBCTA DBCTASK	DBCTASK Display	CICS
DBCTT DBCTTASK	DBCTTASK Display	CICS
DD DDIR	DDIR Display	CICS
DDIRXPND	DDIRXPND Display	CICS
DDIRXPND2	DDIRXPND2 Display	CICS

Table 14-1 Service Select Codes for Refresh Cycle SERVICE Field (Part 3 of 6)

Service Select Code	Application Description	Product Line (Type)
DE DEST	DEST Display	CICS
DL DL/I	DL/I Display	CICS
DSA DSAS	DSAS Display	CICS
DS DSNAMES	DSNAMES Display	CICS
EN ENQUEUE	ENQUEUE Display	CICS
EXI EXITS	EXITS Display	CICS
F FILE	FILE Display	CICS
FILEX FILEXPND	FILEXPND Display	CICS
FILEXP2	FILEXP2 Display	CICS
G GRAPH	GRAPH Display	CICS
I ICE	ICE Display	CICS
J JOURNAL	JOURNAL Display	CICS
LP LPAS	LPAS Display	CICS
M MONITOR	MONITOR Display	CICS
NUC NUCLEUS	NUCLEUS Display	CICS
PL PLAN	PLAN Display	CICS
PLANX PLANXPND	PLANXPND Display	CICS
PPST	PPST Display	CICS
P PROBLEM	PROBLEM Display	CICS
PR PROGRAM	PROGRAM Display	CICS
PSB PSBNAME	PSBNAME Display	CICS
REG REGIONS	REGIONS Display	CICS
REM REMOTES	REMOTES Display	CICS
REV REVIEW	REVIEW Display	CICS
SE SESSIONS	SESSIONS Display	CICS
SH SHARE	SHARE Display	CICS
ST STATUS	STATUS Display	CICS
STE STEPLIB	STEPLIB Display	CICS
S SUBPOOL	SUBPOOL Display	CICS
SUF SUFFIX	SUFFIX Display	CICS
SUM SUMMARY	SUMMARY Display	CICS
T TASK	TASK Display	CICS
TC TCBS	TCBS Display	CICS
TEMP TEMPSTRG	TEMPSTRG Display	CICS
TEMPX TEMPXPND	TEMPXPND Display	CICS

Table 14-1 Service Select Codes for Refresh Cycle SERVICE Field (Part 4 of 6)

Service Select Code	Application Description	Product Line (Type)
TE TERMINAL	TERMINAL Display	CICS
TERMX TERMXPNPND	TERMXPNPND Display	CICS
TI TIOT	TIOT Display	CICS
TR TRAN	TRAN Display	CICS
TRANX TRANXPND	TRANXPND Display	CICS
TS TSUT	TSUT Display	CICS
VS VSAM	VSAM Display	CICS
VT VTAM	VTAM Display	CICS
MAINVIEW for DB2 Applications		
BFRPL	Buffer Pool Status	DB2
CICSC	CICS DB2 Connections	DB2
CICSE	CICS DB2 RCT Entry	DB2
CICSR	CICS DB2 RCT Summary	DB2
DBTS	DB/TS Status	DB2
DB2EX	DB2 Exceptions	DB2
DB2ST	DB2 System Status	DB2
DDFCV	DDF Conversations	DB2
DDFDT	DDF Statistics Detail	DB2
DDFSM	DDF Statistics Summary	DB2
DDFVT	DDF VTAM Status	DB2
DLOGS	DB2 LOG Status	DB2
DMON	Monitor Summary	DB2
DTRAC	Detail Trace Entry	DB2
DUSER	Detail User Status	DB2
DWARN	Warning Summary	DB2
EDMPL	EDM Pool Status	DB2
LOCKD	Lock Contention by DB/TS	DB2
LOCKE	Lock Contention, User Detail	DB2
LOCKU	Lock Contention by User	DB2
LTRAC	DB2 Trace Entries	DB2
PLOT	Monitor History	DB2
RIDPL	RID Pool Status	DB2
STRAC	Summary Trace Entry	DB2
TSTAT	Trace Statistics	DB2

Table 14-1 Service Select Codes for Refresh Cycle SERVICE Field (Part 5 of 6)

Service Select Code	Application Description	Product Line (Type)
TSUMA	Trace Summary by AUTHID	DB2
TSUMC	Trace Summary by CONNECT	DB2
TSUML	Trace Summary by LOCATION	DB2
TSUMP	Trace Summary by PLAN	DB2
TSUMT	Trace Summary by TIME	DB2
USERS	User Summary	DB2
UTRAC	User Detail Trace	DB2
ZPARAM	DB2 System Parameters	DB2
IMF/MAINVIEW for DBCTL Applications		
Note: Unless indicated otherwise, the following applications are provided by both IMF and MAINVIEW for DBCTL.		
APPC	APPC Activity Summary (IMF)	IMS
APPCL	APPC LU Status (IMF)	IMS
BALGQ	BALG Queuing (IMF)	IMS
CLASQ	Class Queuing (IMF)	IMS
DAPPC	Inbound Outbound Allocation (IMF)	IMS
DBST	ISAM/OSAM Pools	IMS
DLIST	DL/I Call Status	IMS
DLTCH	Latch Detail	IMS
DMBUT	DMB Pool Utilization	IMS
DMON	Monitor Summary	IMS
DPOOL	Detail Pool	IMS
DREGN	Region Detail	IMS
DSPST	Dispatcher Statistics	IMS
DTRAC	Display Workload Trace	IMS
DWAIT	Display Workload Wait	IMS
DWARN	Warning Summary	IMS
FPBST	Fast Path Buffer Pool	IMS
IRLM	IRMLM IMS Status	IMS
IRLMG	IRMLM Global Status	IMS
ISTAT	Terminal Input Status (IMF)	IMS
LATCH	Latch Summary	IMS
LCRES	IRLM Lock Contention by Resource	IMS
LCUSR	IRLM Lock Contention by User	IMS

Table 14-1 Service Select Codes for Refresh Cycle SERVICE Field (Part 6 of 6)

Service Select Code	Application Description	Product Line (Type)
LHRES	IRLM Locks Held by Resources	IMS
LHUSR	IRLM Locks Held by User	IMS
LOGST	Log Statistics	IMS
LUSRD	IRLM Lock User Detail	IMS
LTRAC	List of Trace Entries	IMS
MFSST	MFS Statistics (IMF)	IMS
MFSUT	MFS Pool Utilization (IMF)	IMS
OSTAT	Terminal Output Status (IMF)	IMS
QUEST	Queue Statistics (IMF)	IMS
PI	Program Isolation	IMS
PLOT	Monitor History	IMS
POOLC	Pool Summary (CBT)	IMS
POOLS	Pool Summary (non-CBT)	IMS
PSBUT	PSB Pool Utilization	IMS
REGNS	IMS Regions	IMS
REGND	Region Detail	IMS
RS	ESA Real Storage	IMS
SCHED	Scheduling Statistics (IMF)	IMS
STAT/ STATR	System Status	IMS
STRAC	Summary Trace Entry	IMS
TRANQ	Transaction Queue Status (IMF)	IMS
USER	User Status Summary (IMF)	IMS
VSST	VSAM GLOBAL or Subpool Statistics	IMS

You can define up to 30 services. Use forward and backward scrolling (**PF7/19** and **PF8/20**) to define and display additional services.

To validate the services you specified, press **Enter**. The values are shown in the input fields of the SERVICE REFRESH CYCLE application. You can change any of the input field values.

To start the cycle, enter the GO command (**PF6/18**), as described in “Starting and Stopping the SERVICE REFRESH CYCLE” on page 14-12. This definition can be saved for later reuse, as described in “SAVE Command” on page 14-11.

Saving a Refresh Cycle

If you have a refresh cycle that you use often, you can predefine it in a member of the BBPROF data set, then use the member name to invoke it from the COMMAND line. The naming convention for the members is

Member Name	Description
MTODMIN or OPERATOR	examples of a meaningful one- to eight-character member name
CAOCYCnn	nn is any two alphanumeric characters (MAINVIEW AutoOPERATOR for CICS option)
CMRCYCnn	nn is any two alphanumeric characters (MAINVIEW for CICS product line)
IAOCYCnn	nn is any two alphanumeric characters (MAINVIEW AutoOPERATOR for IMS option)
CYCxx	xx is any two alphanumeric characters (MAINVIEW for DB2 or IMF product lines)
MAOCYCnn	nn is any two alphanumeric characters (MAINVIEW AutoOPERATOR for OS/390 option)
AOCYCnn	nn is any two alphanumeric characters (MAINVIEW AutoOPERATOR Base)

Use the following keywords to define a refresh cycle in a BBPROF member.

Keyword	Description
SERV=	<p>service select code; for example, SERV=LOG</p> <p>See the SERVICE parameter values in “Creating Cyclic Displays: CYCLE SETUP” on page 14-2.</p>
OPT=	<p>service parameters</p> <p>A valid statement</p> <ul style="list-style-type: none"> can be written within single quotation marks <p>Multiple parameters (maximum of 60 characters) can be specified in a statement, separated by blanks, enclosed in single quotation marks. A comma or end-of-card terminates the operand.</p>

- can be written without single quotation marks

If single quotation marks are not used, a statement terminates with the last parameter or a comma. Multiple parameters (maximum of 60 characters) can be specified in a statement, separated by blanks.

TARGET= one- to eight-character identifier of the target

If TARGET and TYPE are not specified, the target displayed in the **TGT** field when the member is selected is used.

If TARGET is not specified but TYPE is, the current target for the specified product line when the member is selected is used.

TYPE= type of product line to process the requested service

A product line type does not need to be entered when only one product line is installed.

If a product line is not specified, the product line where CYCLE was invoked is used.

When multiple product lines are installed, a product line type must be specified if the service to be requested does not belong to the active product line.

INTVL= time in seconds (1 to 99) the service is to be displayed before the next one is shown

LOG= either Y (YES) or N (NO) to log the display to the BBI-TS Image log

This parameter is applicable only to the IMF and MAINVIEW for DB2 product lines.

For example, the services defined for a refresh cycle in “Creating Cyclic Displays: CYCLE SETUP” could be defined in a BBPROF member as:

Figure 14-3 Sample Cycle Setup Member

```

*  SAMPLE CYCLE SETUP MEMBER
*
*  IMS DISPLAY MFS UTILIZATION
*
SERV=MFSUT,TYPE=IMS,INTVL=3
*
*  DB2 USER STATUS
*
SERV=DUSER,TYPE=DB2,INTVL=3
*
*  MVS ACTIVE DISPLAY
*
SERV=DA,TYPE=MAO,INTVL=5
*
*  CICS OPEN FILE DISPLAY
*
SERV=FILE,OPT=* OPEN,TYPE=CICS,INTVL=3
*

```

Include comments by putting an asterisk in column 1.

Select the BBPROF member by using the SELECT|S primary command with the member name on the COMMAND line of the SERVICE REFRESH CYCLE application. The SELECT command can select a one- to eight-character BBPROF member name across product lines. The SELECT command also allows meaningful names to be defined; it is the recommended method for invoking an BBPROF member. For example:

```
COMMAND ==> SELECT MAOCYC00
```

Note: AOCYC00, CAOCYC00, IAOCYC00, and MAOCYC00 members are distributed in the BBPROF data set with MAINVIEW AutoOPERATOR.

SAVE Command

Once a group of services is defined using the CYCLE SETUP application, the definition can be saved in the BBPROF data set by issuing:

```
COMMAND ==> SAVE nn
```

where nn is an alphabetic suffix for IMFCYC/CMRCYC or MVSCYC or

```
COMMAND ==> SAVE member-name
```

where member-name is any three- to eight-character alphanumeric member name.

Starting and Stopping the SERVICE REFRESH CYCLE

Enter the **GO** command (**PF6/18**) to start the cycle. Press the attention interrupt key (ATTN for SNA terminals and PA1 for non-SNA terminals) to stop the cycle.

When the cycle stops, the last display shown is reissued and returned to the screen in INPUT mode.

You can analyze the status and make additional requests for other displays as usual. When you press **PF3**, the display returns to the SERVICE REFRESH CYCLE application and shows the service names, parameters, and any short messages. Press **PF6** or type **GO** to restart the cycle.

Each refreshed service display is shown in the sequence and time (DTIME) specified. For the example shown in “Creating Cyclic Displays: CYCLE SETUP” on page 14-2, the IMF MFSUT application is displayed first, followed by the MAINVIEW for DB2 DUSER application, the DA application of the MAINVIEW AutoOPERATOR MVS option, and the MAINVIEW for CICS FILE application. The cycle repeats again, starting with IMF MFSUT.

Viewing Current Operational Events: Log Display

The *MAINVIEW Common Customization Guide* describes Journal logging. MAINVIEW AutoOPERATOR uses the BBI Journal log to record

- MVS, IMS, CICS, and NetView commands issued from MAINVIEW AutoOPERATOR
- responses to MVS, IMS, CICS, and NetView commands issued from MAINVIEW AutoOPERATOR
- all messages handled by a Rule that specifies JRNL=Y
- BBI operation messages
- all BBI-TS user commands

When MAINVIEW AutoOPERATOR messages are written to the MVS console, the BBI-SS PAS ID is appended whenever possible. The BBI-SS PAS Address Space ID is not recorded in the Journal log.

Log Display provides a real-time picture of all current operational events. In the BBI Log Display, you can split the screen to view the BBI-SS PAS Journal log on one side and the SYSTEM STATUS application on the other so you can see current exceptions and actual commands and responses at the same time.

Option L, Log Display, displays the Journal log belonging to the

- BBI-SS PAS monitoring the target identified in the **TGT** field
- BBI-SS PAS identified by BBI-SS PASS ID in the **TGT** field
- BBI-TS, if LOCAL is specified in the **TGT** field

The identifier in the **TGT** field can be changed to point to any valid MVS, IMS, or CICS job name or step name, any valid BBI-SS PAS ID, or to LOCAL. Ask your MAINVIEW AutoOPERATOR administrator for a list of valid BBI-SS PAS IDs.

In addition to the standard primary commands, the primary commands listed below are valid for Log Display.

Command	Description
L	<p>Locate a specific line in the log.</p> <p>For example: L 5 locates the fifth line of the log, L 10 locates the tenth line of the log, and so on. The specified line is moved to the top of the display.</p>
F	<p>Find a specific string in the log.</p> <p>Strings with blanks must be enclosed in single quotation marks. The line with the specified string is moved to the top of the display.</p>
T	<p>Locate a specific time in the log.</p> <p>The line with the specified time is moved to the top of the display. Time can be entered as hh:mm:ss, hh:mm, hhmm, hh, or hh.mm.</p>
PROFILE	<p>Use the PROFILE command to access the Enhanced Journal Facility, which provides views of the Log Display that you can customize. It allows you to view subsets of the Journal log defined by one or more message origins.</p>

Using the PROFILE command

This command displays an input panel where you can define which messages you want to see. You can specify up to six patterns for message origins to be included and six patterns for message origins to be excluded in the display. Generic qualifiers can be used to define these patterns. For example, you can include all messages from CICS* and exclude all messages from CICSTEST, as shown in Figure 14-4.

Figure 14-4 Define a Subset of Messages with the PROFILE Command

BMC Software ----- Log Display ----- General services	
COMMAND ==>	
01/03/08	Date ---
Included Origins	Excluded Origins
10:00:11	Time ---
CICS*__	CICSTEST
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

The PROFILE specifications are saved in userid.BBPROF member LDPARM00. This enables each user to have an individual application profile.

You also can include messages from the current target specified in the TGT field by specifying the variable, *&target*, in the Included Origins column, as shown in Figure 14-5.

Figure 14-5 Include Messages from the Current Target

BMC Software ----- Log Display ----- General services	
COMMAND ==>	
Included Origins	Excluded Origins
&TARGET_	
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Figure 14-6 shows a sample of the Enhanced Journal Facility output produced from the profile specified in Figure 14-5. It displays only those messages from target, DB2F.

Figure 14-6 View Messages from the Current Target

```

BMC Software ----- Log Display ----- General services
COMMAND ==>
                                           TGT ==> DB2F
Line      3,913  Log #1  Status  INPUT      Time 10:33:25 INTV==> 3
15:57:01 DW0120W (02) 15:57:00 AVG ELAPSED TIME(TRANS) = 99.882 (>5.000) ***
15:58:00 DW0121I 15:58:00 AVG ELAPSED TIME(TRANS) NO LONGER > 5.000
15:58:00 DS0541I 15:58:00 CSA PAGING(TOTAL) NO LONGER > 1800
15:59:00 DW0120W (01) 15:59:00 AVG ELAPSED TIME(TRANS) = 99.690 (>5.000) ***
16:00:08 DW0121I 16:00:00 AVG ELAPSED TIME(TRANS) NO LONGER > 5.000
17:01:02 DS0540W (01) 17:01:00 CSA PAGING(TOTAL) = 2599 IN 01:00 MIN (>1800)
17:02:00 DS0540W (02) 17:02:00 CSA PAGING(TOTAL) = 2530 IN 01:00 MIN (>1800)
17:03:00 DS0540W (03) 17:03:00 CSA PAGING(TOTAL) = 2341 IN 01:00 MIN (>1800)
17:04:00 DS0541I 17:04:00 CSA PAGING(TOTAL) NO LONGER > 1800
18:19:00 DS0540W (01) 18:19:00 CSA PAGING(TOTAL) = 2185 IN 01:00 MIN (>1800)
18:20:00 DS0541I 18:20:00 CSA PAGING(TOTAL) NO LONGER > 1800
19:18:00 DS0540W (01) 19:18:00 CSA PAGING(TOTAL) = 2251 IN 01:00 MIN (>1800)
19:19:00 DS0541I 19:19:00 CSA PAGING(TOTAL) NO LONGER > 1800
19:31:00 DW0120W (01) 19:31:00 AVG ELAPSED TIME(TRANS) = 101.138 (>5.000) **
19:32:00 DW0120W (02) 19:32:00 AVG ELAPSED TIME(TRANS) = 99.313 (>5.000) ***
19:33:00 DW0121I 19:33:00 AVG ELAPSED TIME(TRANS) NO LONGER > 5.000
19:34:00 DW0120W (01) 19:34:00 AVG ELAPSED TIME(TRANS) = 99.200 (>5.000) ***
19:35:00 DW0121I 19:35:00 AVG ELAPSED TIME(TRANS) NO LONGER > 5.000
19:36:00 DW0120W (01) 19:36:00 AVG ELAPSED TIME(TRANS) = 99.200 (>5.000) ***
19:37:00 DW0120W (02) 19:37:00 AVG ELAPSED TIME(TRANS) = 99.170 (>5.000) ***
19:38:00 DW0121I 19:38:00 AVG ELAPSED TIME(TRANS) NO LONGER > 5.000

```

To view the origin of the messages in the Log Display, scroll to the left.

Note: You must specify JOURNAL=ENHANCED in BBPARM member BBISSP00 for the target BBI-SS PAS for the PROFILE specifications to take effect.

The PROFILE specifications are not active for a target of LOCAL.

Displaying System Messages: MESSAGES

Option M, MESSAGES, displays a scrollable list of MAINVIEW AutoOPERATOR short messages, error messages, and abend codes. Any message or code can be selected with a line command (S) to produce a complete description that includes

- the reason the message was issued
- what system action will be taken
- what user action should be taken
- the name of the module of origin

Use the LOCATE | L command to locate a specific message. For example, **L IM** locates the first message beginning with the characters IM and displays the message as the first line on the screen.

Messages appearing in the short messages field that have more detailed information associated with them are also contained in this list. The short messages precede the messages starting with message numbers and are stored in message-text collating sequence.

The messages are obtained from the BBMLIB data set. This data set may be browsed for messages if a BBI-TS is not available. If user messages are added to the BBMLIB data set, they must be prefixed with an at (@) sign.

Using PF Keys: KEYS

Option K, KEYS, displays the characteristics of the MAINVIEW AutoOPERATOR program function PF key assignments.

See “Using Program Function (PF) Key Definitions in MAINVIEW AutoOPERATOR” on page 2-19 to change the PF key assignments.

Requesting Time-Initiated EXECs: TIMEXEC Application

The TIMEXEC application manages time-initiated EXEC requests by using the CALLX service to schedule your specified EXEC based on time. It extracts and formats system, job, and time data from a target and BBI. It then passes this information to the EXEC as variables in 10 standard parameters that can be used within the EXEC logic.

Refer to the *MAINVIEW AutoOPERATOR Advanced Automation Guide* for more information regarding EXECs.

The input panel for the TIMEXEC application is shown in Figure 14-7.

Figure 14-7 TIME-INITIATED EXEC REQUESTS Panel

```

BMC Software ----- TIME-INITIATED EXEC REQUESTS ----- REQUEST ISSUED
COMMAND ==>                                                    TGT ==> CICSA
                                                                DATE - 01/15/97
                                                                TIME - 14:16:44

Enter single CALLX request:
EXEC ==>
    INTVL ==>          START ==>          STOP ==>          QIS ==>
    STOPCNT ==>

Enter BLK request:
BLK ==>

                                --- CURRENT CALLX REQUESTS ---
LC CMDS : P(PURGE)
LC  EXEC   STATUS INTVL   START   STOP   QIS USER
    DRIVER  INIT   24:00:00 07:00:00         NO  CWB1
    SMFDUMP INIT   24:00:00 18:00:00         NO  CWB1
    DISA    INIT   00:30:00 08:00:00         NO  CWB1
***** END OF REQUESTS *****

```

The TIME-INITIATED EXEC REQUESTS panel fields are defined as follows.

Field	Description
LC	In the line command field. Enter the following one-character command on the line of the CALLX request you want to purge: P
EXEC	The name of the EXEC for which a CALLX request was made.
STATUS	The current status of the CALLX request for an EXEC, which can be:
ACTV	The request is active.

INIT	The request is waiting to be scheduled. A start time was specified and has not been reached yet.
HELD	HOLD=YES was specified by the SET command. The request is being held until another SET command is issued for the CALLX request for this EXEC.
COMP	The request stopped. The stop time or count specified by the TIMEXEC application STOP parameter was reached.
INV	Request terminated because of an invalid parameter.
LOCK	<p>The request terminated because:</p> <ul style="list-style-type: none"> • A service routine ABEND locked the CALLX service. • A locked request cannot be reactivated. It must be purged.
RST	The request will restart at the next interval time.
INTVL	The period of time between EXEC invocations.
START	<p>The start time of the request.</p> <p>Note: The valid start times are from 00:00:01 to 24:00:00 (00:00:00 is not supported).</p>
STOP	<p>The stop time of the request. Blank means a stop time has not been specified.</p> <p>Note: The valid stop times are from 00:00:01 to 24:00:00 (00:00:00 is not supported).</p>
USER	The identifier of the MAINVIEW AutoOPERATOR user who made the request (USERID).

Describing the TIMEXEC Application

A CALLX request can be a single EXEC scheduled from the TIMEXEC panel. Or a CALLX request can be a block of multiple EXECs and timer-driven service requests. Blocks of service requests can be invoked

- from the TIMEXEC panel
- automatically at BBI-SS PAS startup (BLK keyword parameter in BBPARM member BBIISP00)

Instructions for scheduling and invoking CALLX requests are given in “Setting Up a CALLX Request.”

Use the TIMEXEC application to

- schedule an EXEC over a specified time at defined intervals
- activate a group of predefined CALLX requests, each of which can schedule an EXEC at different times and intervals
- view a scrollable list of active CALLX EXEC scheduling requests
- purge an active CALLX request shown in the scrollable list

Setting Up a CALLX Request

Use TIMEXEC to make single or multiple timer-driven CALLX requests.

A single request specifies a unique EXEC name. If timer-driven, the CALLX request schedules the EXEC at a specific time and specifies a timed interval when the EXEC is to re-execute. A single request is set up by

- specifying a name for the EXEC parameter

and optionally

- setting times with the INTVL, START, or STOP parameters
- specifying QIS ==> YES if the EXEC should quiesce while the target is inactive (*IMS targets only*)

A request for multiple CALLX services is set up by entering a BBPARM member name for the BLK parameter.

The details and valid values for these TIMEXEC parameters are described in the next two sections. If you make an error when you enter these values, a brief message is displayed in the upper right-hand corner of the panel. If an ERROR IN BLOCK REQUEST, ERROR IN REQUEST, or ERROR IN PURGE message is displayed, an explanatory message is written to the Journal log.

Single CALLX Request

The TIMEXEC parameter values for invoking and scheduling a single EXEC are described in Table 14-2.

Table 14-2 TIMEXEC Parameters (Part 1 of 2)

Parameter	Value
EXEC ==>	<p>Enter a one- to eight-character member name of an EXEC in the BBIPROC data set.</p> <p>You cannot use the EXEC parameter and the BLK parameter, described in “Block of CALLX Requests” on page 14-21, at the same time. If you do, MAINVIEW AutoOPERATOR generates an INVALID COMBINATION error message.</p>
INTVL ==>	<p>This optional parameter specifies the time interval between each EXEC invocation. Enter hours, minutes, and seconds in hh:mm:ss format. The minimum value is one second, 00:00:01, and the maximum value is 24 hours, 24:00:00.</p> <p>The INTVL value specifies how often the EXEC is to be scheduled. For example, you create an EXEC named BACKUP that issues an CICS command to start a backup procedure.</p> <p>Using the TIMEXEC application parameters, EXEC, START, and INTVL, you identify the BACKUP EXEC and specify a START of 18:00:00, with an INTVL of 24:00:00. This means a backup procedure, issued as an CICS command by the BACKUP EXEC, will be initiated every day at 6:00 P.M.</p> <p>Refer to the <i>MAINVIEW AutoOPERATOR Advanced Automation Guide</i> for more information regarding EXECs.</p> <p>If you do not specify an interval time, the default value is used. The default value for INTERVAL is one minute, unless it has been overridden in BBPARM member BBIISP00. To override this value, specify INTERVAL=hh:mm:ss in BBIISP00.</p>
START ==>	<p>This optional parameter specifies the time the EXEC is to start. Enter hours, minutes, and seconds in hh:mm:ss format.</p> <p>Values for the time parameters are specified as hh:mm:ss, where hh is the number of hours, mm is the number of minutes, and ss is the number of seconds. All time fields for this format must contain numeric data. Leading zeroes must be used to fill a field as needed, such as 00:05:25 or 05:15:00.</p> <p>If you specify a time 10 minutes or more <i>before</i> the current time, MAINVIEW AutoOPERATOR adds 24 hours to the START time. For example, if at 15:50:00 you request a START time of 15:35:00, MAINVIEW AutoOPERATOR starts the EXEC the next day at 15:35:00.</p> <p>If no START time is specified, the default is to start at the next full minute from the current time.</p>
STOP ==>	<p>This optional parameter specifies when the EXEC is to stop. Enter hours, minutes, and seconds in hh:mm:ss format.</p>

Table 14-2 **TIMEXEC Parameters (Part 2 of 2)**

Parameter	Value
STOPCNT ==>	<p>You can enter a stop count as any number from 1 to 99999999. A stop count specifies the number of times the EXEC is to execute before it stops.</p> <p>For example, if you enter the number 5, the EXEC is executed five times and then stops. If you want an EXEC to be scheduled only once, enter a 1. The STOPCNT is entered in the STOP field.</p> <p>If you do not specify a stop time, the EXEC remains active until purged (see “Purging an Active CALLX Request” on page 14-23) or the BBI-SS terminates.</p>
QIS ==> (IMS targets only)	<p>This optional parameter specifies whether or not this CALLX request should be quiesced (YES) when IMS is inactive. Enter YES or NO. YES tells the TIMER facility not to schedule the EXEC when IMS is inactive. If NO is entered, the EXEC is scheduled as specified by the START, STOP, or INTVL parameters. The default is NO.</p> <p>The MAINVIEW AutoOPERATOR CALLX service passes the target status to the time-initiated EXEC (<i>IMS targets only</i>). The EXEC can test this status before issuing any commands.</p>

Block of CALLX Requests

Timer-driven requests can be grouped and named as a BBPARM member. This includes CALLX service requests. Timer-driven requests can then be issued by

- entering the name of the BBPARM member in the BLK parameter of the TIMEXEC application:

BLK Enter a one- to eight-character name of a BBPARM member containing a group of CALLX requests. MAINVIEW AutoOPERATOR generates an INVALID COMBINATION error message if you request a block of CALLX services and a single CALLX service at the same time.

- specifying the BBPARM member name in the BLK parameter of the SET command.
- specifying the BBPARM member name in the BLK parameter of BBPARM member BBIISP00. The CALLX timer-driven requests are automatically started when the BBI-SS PAS starts.

The example steps are as follows:

Step 1 Create a member in BBPARM and name it STARTX.

STARTX requests three timer-driven EXECs called DRIVER, SMFDUMP, and DISA. These EXECs do the following:

- DRIVER—Starts VTAM system at 7:00 A.M. and, when initialized, starts TSO.
- SMFDUMP—Switches and Dumps SMF data every day at 6:00 P.M. except weekends.
- DISA—Issues a #D A,L command every 30 minutes.

Step 2 Include the timer-driven CALLX requests and any other timer-driven service requests you want in the BBPARM STARTX member:

```
REQ=CALLX DRIVER
REQ=CALLX SMFDUMP START=18:00:00
REQ=CALLX DISA I=00:30:00 START=14:17:00
```

Step 3 Specify either

- STARTX for the BLK parameter value (BLK ==> STARTX) in the TIMEXEC application.
- BLK=STARTX in the BBIISP00 member of BBPARM, which automatically initiates the CALLX requests in the BBPARM STARTX member whenever the BBI-SS PAS starts.

Purging an Active CALLX Request

When you select the TIMEXEC application, a scrollable list of active EXEC schedule requests is displayed as CURRENT CALLX REQUESTS. On the left is the line command (LC) column. The only line command is **P**, to purge an active CALLX request. Move the cursor to the LC column beside the name of an EXEC and enter a **P** to purge the CALLX request for that EXEC.

Note: To purge a time-initiated request that was created by an EXEC, the **TGT** field on the TIME-INITIATED EXEC REQUESTS panel must specify the same name as that used on the TARGET=xxxx parameters on the IMFEXEC IMFC SET REQ=CALLX statement.

For example, the **TGT** field on the panel must display SYSB if the following text were coded in an EXEC:

IMFEXEC IMFC SET REQ=CALLX	+
@DAILY, START=10:45:00, STOP=10:55:00,	+
I=00:10:00, TARGET=SYSB, USRID=JDB1	

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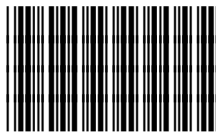
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